Eawag
Überlandstrasse 133
Postfach 611
8600 Dübendorf
Schweiz
Telefon +41 (0)58 765 55 11
Telefax +41 (0)58 765 50 28
www.eawag.ch

eawag
aquatic research

Evaluation of distribution models for household water treatment products in Kenya and Bolivia

Final Report

February 2012 – September 2013

Regula Meierhofer, Carina Flückiger
Dübendorf, 30.9.2013

Executive Summary

Background

Global efforts to scale up the promotion of household water treatment as well as establishing sustainable water treatment practices have been difficult. This can be attributed to challenges particular to the market at the base of the pyramid such as lack of awareness on the importance of treating drinking water, lack of access to products, particularly in rural areas, lack of a broader choice of suitable products and difficulties to establish sustainable supply chains.
The marketing of ceramic filters has been challenging since the BOP markets are largely dominated by fast-moving consumer goods and previous marketing trials with filters revealed that successful marketing is among other factors linked with the provision of microcredits.
Between January 2012 and April 2013 marketing trials for ceramic water filters and other HWTS products were carried out in Kenya and Bolivia to assess the influence of the different stakeholders responsible for community education and operation of distribution and retail sales, as well as different payment in installment options on product sale and willingness to pay for ceramic filters.

Method

Four different project sites were chosen for the marketing trial each in Kenya and in Bolivia. The sites were selected based on sufficient water supply from surface sources, keeping enough distance between the sites to avoid cross-flow of information and interest for partnership from the District Public Health and Sanitation office as well as community leaders. In site 1, the community education was done through the NGO's promoters, while the sale of products was done through a local entrepreneur or water supply network operator, in site 2 the community education and product sale were done through community health workers of the official public health system. In site 3, community groups were trained and motivated to do community education as well as product sale and in site 4, the communication as well as the sale of products was done through the promoters of an NGO.
In each site 300 households received trainings through household visits and community group training events. These households and 150 non-intervention households per site, were surveyed in each of the 8 sites (1800 households in each country) at baseline and after about 11 months of marketing the products. Quantitative questionnaires were used to collect information from households, while sales staff gathered qualitative information and records of sales

Results

Quantitative analysis of the data in Kenya as well as in Bolivia show that that people's attitudes (if they like the system they are using, if they think that it is important to treat their water, if they think that untreated water is good or bad for health) strongly correlate with the frequency of HWTS use. Also, households are much more likely to frequently use HWTS when a large proportion of neighbours also treat their water.

The project showed that engaging already well-established community groups with sales experience and an entrepreneurial spirit is an effective means of distributing products to consumers living at the

base of the pyramid. However, collaborating with groups that do not have any know-how or experiences in product marketing and sale creates a high risk for failure of the distribution mechanism.

Using promoters of an NGO for community education can be effective to initiate the behavior change process but involving them in product sale is not recommended as on one side, promoters often lack sales skill and on the other side, customers often approach representatives of an NGO with an attitude of getting something for free, which has a negative effect on their willingness to buy a product from an NGO's promoter.

Conducting community training through household visits was a very important strategy to increase the awareness on the importance of household water treatment and facilitate the sale of products for household water treatment (chlorination products and ceramic filters).

The motivation and skills of the field worker to address psychosocial attributes of household water treatment during the household visits (liking the product, importance of water treatment, risk factors) are more important than the affiliation of the field worker to a community based organization, to a group of community health workers or to an NGO.

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Introduction

Although almost 80% of the world population used an improved drinking-water source at the end of 2011, large disparities exist between rural and urban areas and different regions; 83% of those without access to an improved source live in rural areas and less than 50% of the population in sub-Saharan Africa enjoyed access to an improved drinking water source (WHO/ Unicef: JMP – Progress on Sanitation and Drinking Water – 2013 update). In addition to the 768 million people without access to an improved drinking water source, millions more consume unsafe water. “Improved drinking water source” is a definition of a source with a lower risk for water contamination, but it does not necessarily imply that the water provided is safe (WHO/Unicef, 2005 – Water for life: Decade for action 2005-2015. Geneva).

Household water treatment, if applied correctly and consistently is a strategy to reduce the health risks related to the consumption of unsafe drinking water. Despite of this, efforts to promote and scale up household water treatment practices have been challenging. In his report on “Scaling up household water treatment among low-come populations” Clasen estimates that currently, 18.8 million people use a method to treat their water before consumption, such as chlorination, solar disinfection, filtration through ceramic filters or biosand filters, while 350 million people boil their water. (Clasen, 2009).

An important constraint encountered during HWTS promotion programs is the great need to create demand for household water treatment: without well conceptualized community education, behavior change and social marketing interventions it is unlikely that broad populations, particularly not the most vulnerable households, will take up consistent drinking water treatment and hygiene practices.

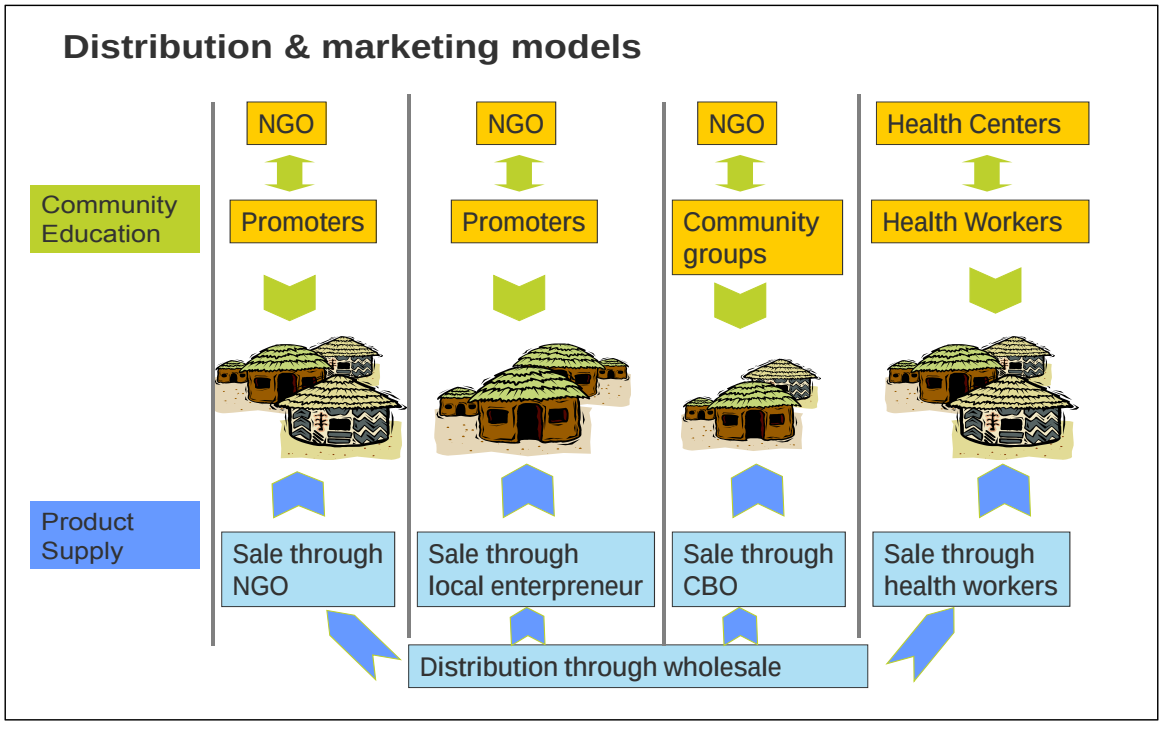
In addition, drinking water treatment is only taken up and sustained if people have a reliable access to the adequate products needed to carry out the behavior. The lack of product supply chains and therewith the lack of access to products for drinking water treatment in many areas pose a constraint for the promotion and sustainable application of household water treatment.

Conventional business people often hesitate to take up the sale of HWTS products. One reason is that the market for the bottom of the pyramid consumers is dominated by fast moving, cheap consumer goods and entrepreneurs are not very open to take up the sale of higher priced products that require a longer turnover. This often leads to a lack of products for household water treatment in marginalized regions. In addition the demand for drinking water disinfection is lacking in many area and first needs to be created by awareness building and behaviour change campaigns. The study conducted in Kenya and Bolivia intended to gain more insight on the combined effect of product distribution, social marketing and community education if carried out by different stakeholders such as the health sector, the private sector, community based organizations and NGO’s.

Methodology

During our study we experimented with four different distribution models in Kenya and Bolivia to analyse the effect of different community education and distribution models on the demand for household water treatment, the sale of different products, willingness to pay as well as the mechanisms, effectiveness and cost (profit margins) of different actors involved in the supply chain of HWTS products.

In each country 4 sites were selected to implement and evaluate a specific distribution and social marketing model. In site 1, the community education was done through the NGO's promoters, while the sale of products was done through a local entrepreneur or water supply network operator, in site 2 the community education and product sale were done through community health workers of the official public health system. In site 3, community groups were trained and motivated to do community education as well as product sale and in site 4, the communication as well as the sale of products was done through the promoters of an NGO.



Criteria for the selection of intervention sites were:

- Sufficient water supply from surface sources (high likelihood of the water being contaminated),
- No previous safe water or household water treatment promotion activity that comprised the distribution of free products had taken place in the area
- Enough distance between the sites to avoid cross-flow of information
- Interest for partnership from the District Public Health and Sanitation office/ Community leaders.

In each site 300 households were targeted for the intervention scheme. 150 additional households in each site served as control group. HWTS technologies promoted in Kenya were Chlorination and Ceramic Filtration. In Bolivia, information on Chlorination, SODIS and Ceramic Filtration was provided during the community education, while the only the installment of a supply chain for Ceramic Filters was actively supported.

In both countries the supply chains for ceramic filters were set up and coordinated through NGO's as local partner organizations: Kenya Water for Health Organisation in Kenya and Fundación SODIS in Bolivia.

Baseline data were collected from 300 intervention households and 150 control households in Kenya from February to March 2012 and April to Mai 2012 in Bolivia. Product marketing activities and community education were implemented from April 2012 to February 2013 in Kenya and Mai 2012 to February 2013 in Bolivia. Final data were collected from 300 intervention households and 150 control households in Kenya from January to February 2013 and from February to March 2013 in Bolivia.

Data collection

Printed questionnaires were used during baseline data collection. For the collection of final data we switched to mobile data collection using mobile phones.

The questionnaire was loaded onto the handset and the interviewers were able to mark or write the answers directly on the handset as well as marking the GPS coordinates of the place, where the interview was taken. The mobile phones were handed out to the interviewers in the morning and recollected in the evening in recharge the phones. We had to buy an additional battery for each handset as the GPS consumed more battery than expected. High power consumption was caused by the GPS function, but constantly turning the GPS off and on was not an option as it takes a long time for the mobile phones to get the GPS coordinates.
Monitoring of the interviewing process going on turned out to be very effective since the supervisor is able to check the submitted surveys instantly. The program allows the supervisor to see the start and end time of each survey and locate the place where the interview was taken due to the GPS coordinates. Good internet connection is necessary to monitor the on-going process. If no internet connection is available in the field, questionnaires can be downloaded from the handsets through a direct cable connection to the computer of the supervisor in the evening. In this case the controlling of the questionnaires has to be done in the evening. With temporary breaks in the network connection the questionnaires were saved on the mobile phones until there was reception signal and then sent automatically.
The use of mobile data collection eliminated the need for manual data entry and therewith also reduced the potential for making mistakes during data entry.
Interviewers preferred to work with handsets instead of filling out questionnaires on paper.

During the final data collection in Bolivia we faced some challenges with the interviewers. We had to dismiss the first team of interviewers since some of them manipulated the data by entering fake interviews. Instead, we decided to use the more reliable staff of the Fundacion SODIS (FS) to collect

the data. However, we had to repeat the training of the interviewers and the data collection took much longer than expected.

Recommendations for mobile data collection:

- Careful training on the use of mobile phones is necessary. In Kenya some of the interviewers had not used a phone with a touch screen before.
- Buy spare batteries
- The person who is controlling the data needs to have access to a good internet connection.
- The less text has to be entered manually the better, as less technical problems can occur.
- The language on the dash board should correspond to the language of the interviews.
- The supervisor who collects the phones in the evening needs to have access to reliable electricity to be able to charge the phones.
- The bigger the screen the easier to handle the phone

Intervention in Kenya

Description of intervention sites

In Kenya, intervention sites were selected in Munyu and Thuthua area in Thika East District. In Thika East District, most people get their water from the turbid river. Also in Yathui area in Mwala District most households get their water from surface sources. Villages around Muthetheni in Mwala District get their drinking water by scooping sand from the riverbed of Nthwake river

Establishment of the supply chain for products

For the establishment of the supply chain for ceramic filters, a relation was established with the Kenya Ceramic Project. KCP produces ceramic water filters in Kitale and sells them ex-factory for 1100 KSH (12.7 USD). A bulk delivery of 200 ceramic filters was made to the project area in Thika, for a whole sale price of 1300 KSH (15 USD) per filter. From Thika, KWAHO transported 40 filters to the project area in Mwala, where to wholesale price mounted up to 1350 KSH (15.6 USD). The retail price of filters was 1500 KSH (17.3 USD) in Thika and initially 1600 KSH (18.4 USD) in Mwala (later reduced to a subsidized price of 850 KSH). Prior to the delivery of 200 ceramic filters, KWAHO provided a financial guarantee to the Kenya Ceramic Projekt. Wholesalers however made the payments for the filters directly to KCP. At the retail level, individual customers were able to pay for their filters in installments. Filters were handed out once the full payment was received.
For establishing the supply of Chlorine products, a collaboration was established with PSI, who directly supplied the Chlorine products to the wholesalers involved into the project. The wholesale price for a 150 ml bottle of Waterguard was 16.5 KSH, a pack of 20 tablets of Aquatabs 42 KSH and a PUR sachet 4.22 KSH.

Intervention in Area 1: Munyu, Thika (Promotion: NGO / Sale: entrepreneurs)

In Munyu, a promoter from KWAHO was responsible for promoting HWTS. The promotion was mainly done through household visits, together with information dissemination during community meetings and other social gatherings.
The responsibility for the retail distribution and sale of HWTS products was given to the operating committee of the community water project (CWP) in Munyu. The CWP is a financially self-sustainable group, managing the piped water supply scheme in the area. The water supplied is collected from the river and directly supplied to customers without prior treatment. The CWP sold filters to their existing network of customers. Payment in installments for filters was possible, the payment rates were added to the water bill.
Filters in Munyu were sold for 1'500 KSH. CWP obtained a profit margin of 200 KSH from the sale of one filter.
In addition to CWP, two shop owners were selling HWTS products, mainly Waterguard, but they also sold Ceramic filters for 1'500 KSH.

Intervention in Area 2: Thuthua, Thika (Promotion & Sale: Public Health System)

In Thuthua, the direct promotion and sale of HWTS products (ceramic filters and Waterguard) was conducted by the community health workers of the Community Health Unit in partnership with the Public Health Officer. The promotion approach included community meetings and household visits. The community health workers visited households mainly over the weekend.
The KWAHO promoter trained the community health workers and assisted in process monitoring.
Ceramic filters were supplied on credit for 1'300 KSH per piece to the Public health office, where the CHW's could pick them up for sale. CHW's sold filters within the community for 1'500 KSH and gained a profit margin of 200 KSH.

Intervention in Area 3: Muthetheni/Yangila, Mwala (Promotion & Sale: CBO)
In Yangila/ Muthetheni two community organizations, "House of drum youth group" and "Utithini organic self-help group" were trained and supervised through the KWAHO promoter while doing the promotion and sale of HWTS products to households. While "House of drum youth group" had an existing working relation with PSI prior to the start of the project as wholesaler for health products including Chlorine and had corresponding business experience, "Utithini organic self-help group" did not have previous experience with the marketing of products. During the intervention, "Utithini organic self-help group" worked as retailers, while "House of drum youth group" worked as wholesaler and retailer.
Filters were sold to the community by both CBO's after they bought them from the KWAHO promoter based in Mwala, who acted as a wholesaler for the filters. The groups collected them by order after pre-payment of 1'350 KSH per filter. The CBO sold the filters to the community members at 1'600 KSH, gaining a profit margin of 250 KSH.
At the time of midterm evaluation however, no filters were yet sold in this intervention site. The selling price therefore was lowered to a subsidized price of 850 KSH.

Intervention in area 3: Yathui, Mwala (Promotion: NGO / Sale: NGO)

In Yathui the promotion and sale of HWTS products initially both was done through a KWAHO promoter. Promotion activities comprised household visits, community group trainings and a number of community demonstrations. However, the sale of chlorine products through a promoter had to be ceased as household were claiming to receive products for free as they were distributed through an NGO. Subsequently, four entrepreneurs were identified and established as retail distributers for Chlorine products.
Ceramic filters were directly sold by the KWAHO promoter, initially for a price of 1600 KSH (The selling price in Mwala District was higher than in Thika District to cover for the cost of transport of filters from Thika to Mwala).

At the time of midterm evaluation no filters were yet sold in this intervention site. The selling price therefore was lowered to a subsidized price of 850 KSH. Subsequently,

Qualitative Results, Kenya

Area 1: Munyu, Thika (Promotion: NGO / Sale: entrepreneurs)

The committee of the community water project (CWP) sold 51 filters for a price of 16.5 USD.
2 local shops in the project area sold 4 filters.
Organizing the sale of filters through a community based enterprise that is already providing piped water in combination with community education through a promoter was a successful approach.
CWP however received several complaints from customers that they should provide safe water instead of only collected river water, distributing it untreated to the households and selling household water filters to the household who consume the water they provide. CWP enabled payment in installments to their customers.

In area 1, in addition to CWP several retail shops sold chlorination products, mainly water guard and also took up the sale of ceramic filters. However the sale of the relatively expensive ceramic filters through these kiosks has been challenging due to space limitations and the difficulty to collect payment in installments. A lack of customers trust into the kiosk owners prevented them to pay their filters in installments to the kiosks (filters were handed out after the full payment for the filter was received). The kiosks are more suitable to sell small items such as Waterguard and PUR.

Area 2:: Thuthua, Thika (Promotion & Sale: Public Health System)

The community health workers sold 40 filters for a price of 16.5 USD

Sale and social marketing with the health centre and the community health workers (CHW) in Thika worked out very well. The initiative was strongly supported by the Public health officer in Thika, who prompted to CHW's in this area to define sales targets. The group of CHW's were motived in selling water filters and interested in making profit from the sale.

However, the Community Health Workers (CHW) initially were having some difficulties to manage the finances. As they sold the water filters by installment payments and did not have an accountant responsible for this finance, the group had difficulties to keep records of all sales and payments after several months. After a financial management training was provided, the CHW were able to organise themselves and a good bookkeeping of their sales. The CHW's sold the filters at different prices. The wholesale price was 1'300 KSH and the recommended retail price 1'500 KSH. Nevertheless, some CHW chose to rise the retail price to increase their profit margin from 200 up to 300 or 400 KSH. No chlorination products were sold in this area

Area 3: Muthetheni/Yangila, Mwala (Promotion & Sale: CBO)

One of the community groups sold 11 filters for a price of 10 USD and had a good sale of chlorination products

The second community groups did not sell any filter and did not have a good sale of chlorination products.

Working with Community based organisations (CBO) revealed that organizing distribution and social marketing through a community based organization might be successful, but only if the group is well organized and has sales experience.

One of the groups involved in community education and products sale: the CBO "House of Drums" was selling various PSI products before we introduced the project. During the project period the group was very successful selling smaller HWTS products and also was able to sell a number of water filters after the price was lowered from 16.5 USD to 10 USD.

The other CBO "Itithini Organic Self Help Group" did not have any sales experience and their working method was not very dynamic. Their sales skills were limited and keeping their motivation up was difficult as they were not earning and profits. "Itithini Organic Self Help Group" did not sell any filters and only a very limited amount of chlorination products.

Area 4: Yathui, Mwala (Promotion: NGO / Sale: NGO)

The NGO promoter sold 1 filter for 17.5 USD and 26 filters for 10 USD

The NGO promoter was very committed in implementing an effective community education campaign. He was able to reach all of the 300 households several times and participated in various community gatherings. However, the model of combining community education and product sale through a promoter was problematic as the households trained demanded goods for free as they perceive NGO's as charity organizations. The sales model therefore was reorganized and the sale of chlorination products handed over to local shops in the project area.

The promoter continued with the sale of ceramic filters, but only was able to sell filters after the price was lowered from 17.5 USD to 10 USD. He offered payment in instalment schemes to the customers and handed over the filters after he had received the full payments for the filters. For this scheme to be acceptable within the community, the promoter had to place much effort to build a relationship of trust within the community.

Quantitative results Kenya

Areas and willingness to pay

Area 1: Thika District. Intervention scheme: community education through the promoter of an NGO, product sale through water utility and local entrepreneuers

Area 2: Thika District. Intervention scheme: community education as well as product sale through the community health workers of the public health system

Area 3: Mwala District. Intervention scheme: community education as well as product sale through a community based organization

Area 4: Mwala District. Intervention scheme: community education as well as product sale through the promoter of an NGO.

The analysis of baseline data revealed a significant difference in the characteristics of the intervention sites chosen in Thika District and the sites in Mwala District, which are more remote and have a higher employment rate in Agriculture.

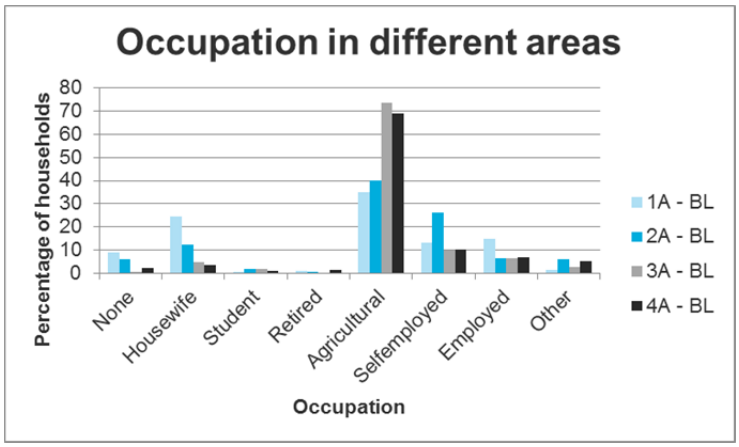


Fig 1. Occupation of people interviewed in the different intervention sites

Households mainly engaged with agricultural income generating activities had a lower willingness to pay for ceramic filters.

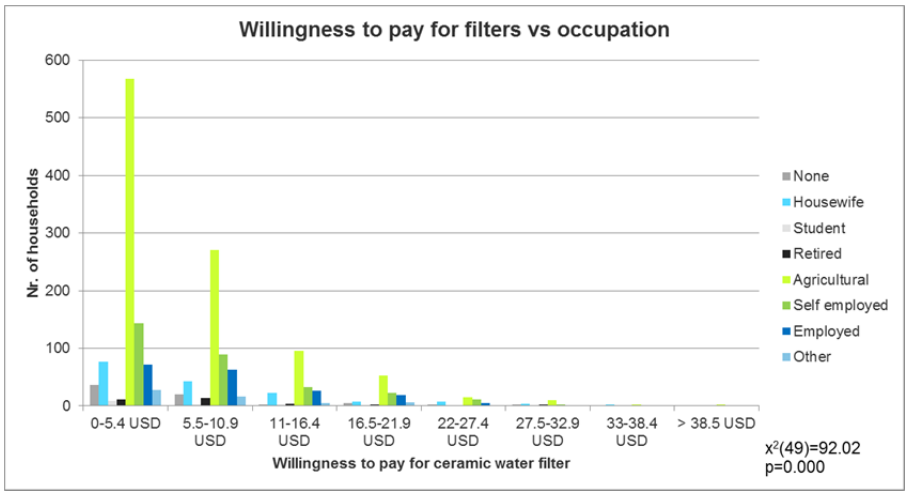


Fig 2. Willingness to pay for filters of households with different occupations

A significant regional difference between Thika District and Mwala District, which is more agriculturally oriented than Thika, was found in the willingness to pay for ceramic filters: In Mwala, only 13% of households were willing to pay more than 11 USD at baseline, and only 4% of households were willing to pay more than 11 USD after the intervention, while in Thika, 31% of households were willing to pay more than 11 USD for a ceramic filter at baseline and 18.55% of households were willing to pay more than 11 USD after the intervention.

In all regions 79% of all households were not willing to pay more than 11 USD for a ceramic filter: 51% were willing to pay up to 5.4 USD, 28.3% were willing to pay 5.5 to 10 USD.

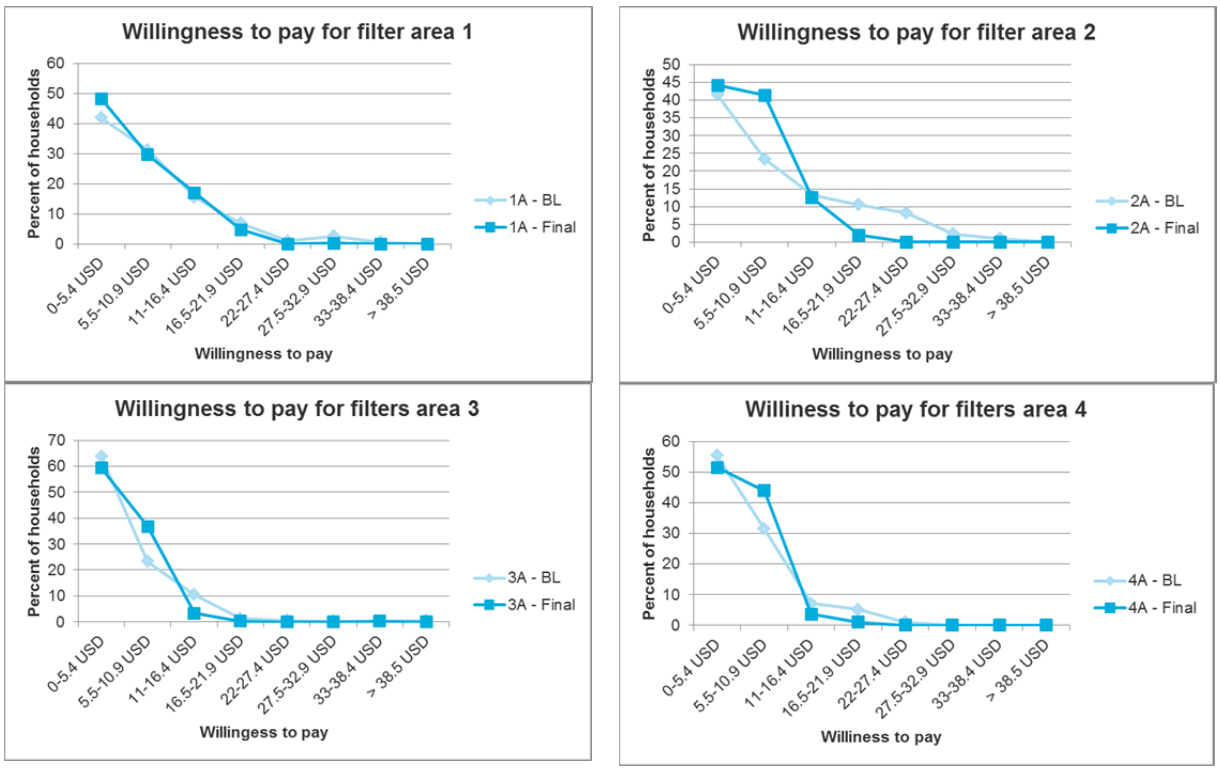


Fig 3 Willingness to pay for water filters in different intervention sites

Also, the willingness to pay for ceramic filters was strongly correlated with the amount of money available per week at baseline.

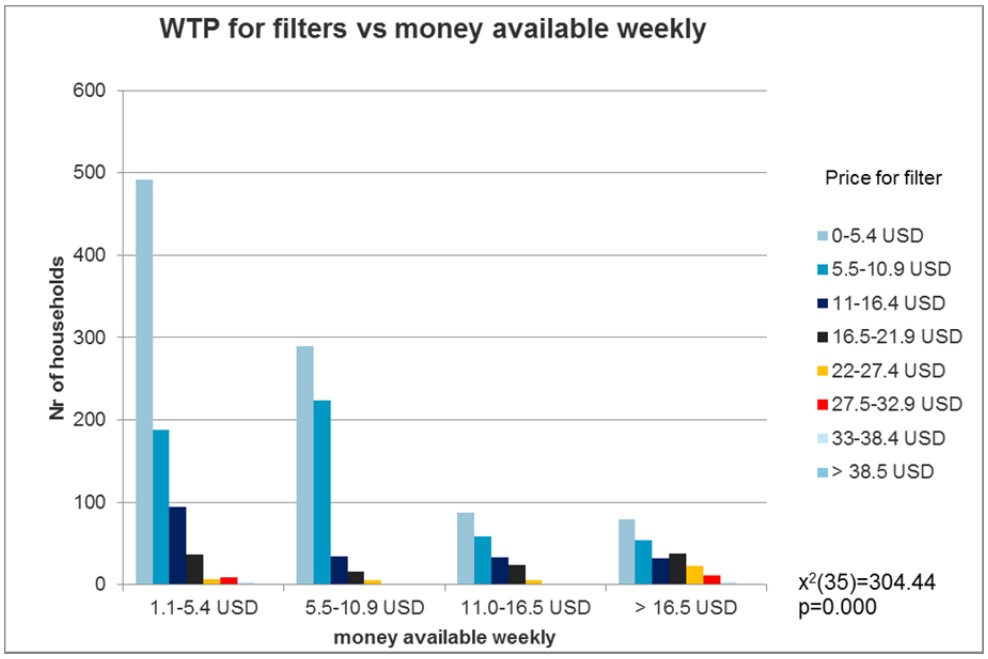


Fig 4. Willingness to pay for ceramic filters vs the household's amount of money available per week

Use of household water treatment

In all areas, the use of household water treatment increased by an average of 20% from 61.4% to 81%. In the different interventions sites it increased from 65.5% to 85.9% in area 1, 60.75 to 69.3% in area 2, 58.7% to 81.1% in area 3 and 60.6% to 87.5% in area 4. A larger influence of the intervention was observed on the frequent use (defined as using the method often to always) of household water treatment it in increased from 40.2% to 62.9% in area 1, 35.4% to 51.8% in area 2, 25.5% to 69.9% in area 3, 35% to 73.6% in area 4; and from 34.6% to 65% in all areas in average.

Before the community education activities were implemented, a lower number of households in Mwala District used Chlorination to disinfect their drinking water; 30% in area 3 and 33% in area 4, compared to 68.6% of households in area 1 and 55.7% in area 2 in Thika Distict having a chlorine product available. The intervention increased the availability of chlorine in the household in Mwala District by 27.3% in area 3 and 10.3% in area 4.

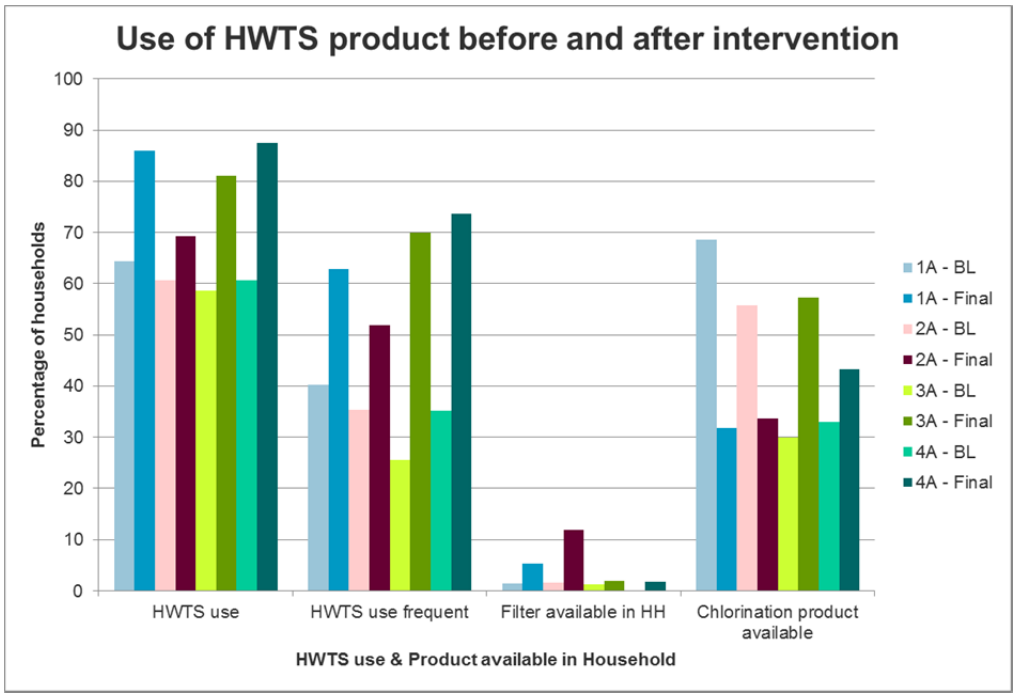


Fig 5 Use of HWTS product before and after the intervention in 4 different sites.

In area 1 and 2 however the availability Chlorine products in the households decreased. In those areas more people said that they would be boiling and 5% of households in area 1 and 10% in area 2 switched to using a ceramic filter. Only very few ceramic filters were sold in area 3 and 4 - even after the selling price of the filters in these areas was reduced to 10 USD.

Households in all areas had the impression that a higher number of neighbours are using household water treatment. The percentage of neighbours using increased by 23.6% to 54.3% in site 1, by 23.7% to 54.5% in site 2, by 48.1% to 75% in site 3 and by 37.6% to 69.4% in site4.

Source of information

Before the intervention, radio was the most important source of information for the households in all areas. After the intervention, the promoter was the most important source of information for households in site 1 (24.4%), Community health workers for households in site 2 (33.3%), community based organizations (65%) and the promoter (30.8%) in site 3 and the promoter in site 4. 61 to 62% of households in site 1 and site 2 received a household visit and 56% stated that the promotion changed their behaviour. 91% of households in site 3 and site 4 were visited and 79% to 88% confirmed that the promotion changed their behaviour.

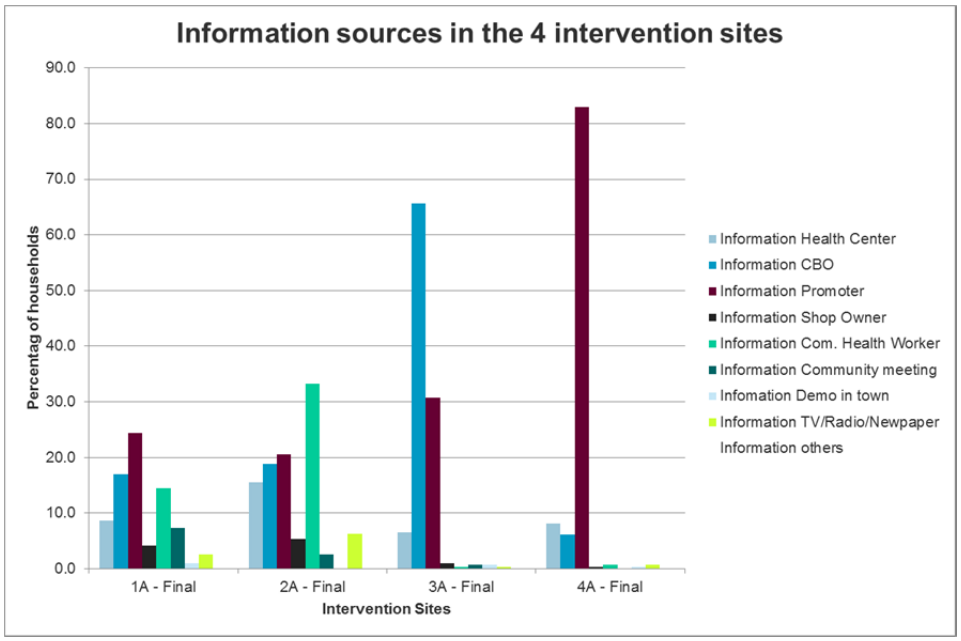


Fig 6 Information sources in the 4 intervention sites

Factors influencing HWTS use and frequent HWTS use

Single factor analysis of different factors influencing HWTS use and frequent HWTS use revealed that mostly factors relating to people's attitude, risk perception and social norms were strongly correlated with HWTS use as well as frequent HWTS if they think that it is important to treat the water, if they like the system they are using, if they think that drinking raw water is good or bad for health, and if a high number of neighbours are using the method. A very strong correlation was found between HWTS use and if the household had received a household visit, found it useful and if people think that the promotion changed their behaviour. See detailed results of chisquare values of different factors correlated with frequent HWTS use in different sites in the table 1.

At the baseline the amount of money available every week was correlated with HWTS as well as frequent HWTS in all sites except area 3.

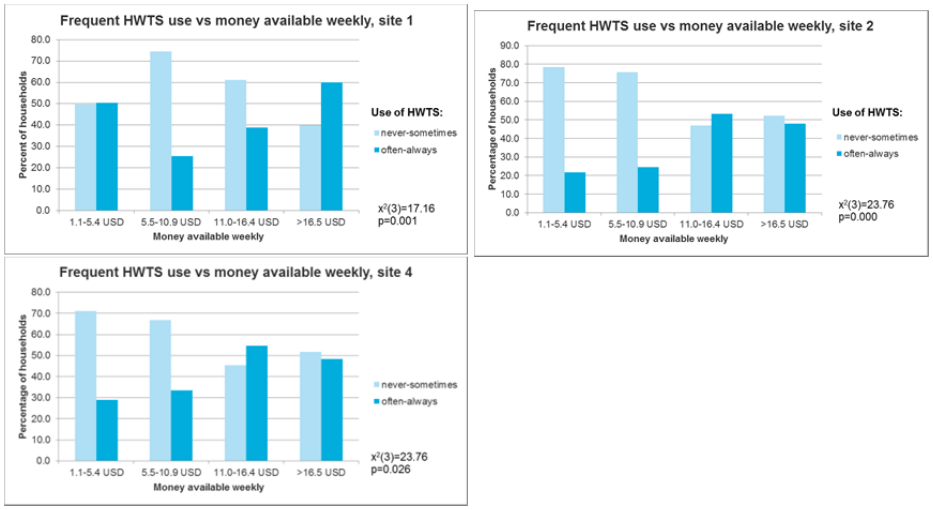


Fig 7. Frequent use of HWTS vs money available weekly in different sites

Outcome variable: Frequent use of HWTS	B	S.E.	p	OR	95% C.I. for OR	
					lower	upper
Education level	.400	.123	.001	1.491	1.172	1.898
Turbidity of water	.230	.139	.098	1.258	.959	1.651
Promotion received	-2.248	.410	.000	.106	.047	.236
Information through health center	-.368	.227	.106	.692	.443	1.081
Information through CBO	.132	.196	.501	1.141	.777	1.677
Information through Promoter	.144	.207	.486	1.155	.769	1.735
Information through Shop owner	-.263	.351	.454	.769	.386	1.530
Information through Com. Health Worker	-.260	.223	.242	.771	.498	1.193
Information through Com. Meeting	.910	.467	.051	2.485	.996	6.202
Information through Demo in town	1.254	1.305	.337	3.504	.272	45.224
Information through TV, Radio, Newspaper	-1.288	.363	.000	.276	.135	.562
Into through other	-1.780	1.019	.081	.169	.023	1.244
Did promotion change behaviour	-1.798	.306	.000	.166	.091	.302
Like the method used for treatment	.717	.076	.000	2.049	1.764	2.380
Importance of treating the water	.537	.099	.000	1.711	1.410	2.077
Percentage of neighbours using HWTS	.671	.072	.000	1.957	1.699	2.254
Untreated water good or bad for health	.074	.046	.109	1.077	.984	1.179
Handwashing index	.261	.054	.000	1.298	1.167	1.444
Money available per week	.000	.000	.202	1.000	1.000	1.001
WTP for ceramic filters	.163	.092	.078	1.177	.982	1.411
Constant	-3.872	1.043	.000	.021		

R2=0.294 (Cox and Snell), R2=0.406 (Nagelkerke), Model x2(20)=585.480 p=0.000

Table 1. Multvariant logistic regression with frequent use of HWTS as outcome variable

Conclusions Kenya

In Kenya, the logistic regression for frequent use of household water treatment after the intervention revealed that sociopsychological factors such as emotional attributes (if they like the system used – OR: 2.05, CI: 1.8-2.4), if they think it is important to treat the water (OR: 1.7, CI: 1.4-2.1) and social norms (how many neighbours are using household water treatment – OR: 1.9, CI: 1.7-2.3) as well as the education level (OR: 1.5, CI: 1.2-1.9) have the strongest influence on the frequency of household water treatment.
Not a significant influence on frequent use of household water treatment had the risk awareness of users (if they think that drinking water causes diarrhea or other illnesses or has no impact). Also the economic status of the household only in a single factor analysis was correlated significantly with frequent use.

Highly significant but with a smaller odds ratio of 0.104 (CI:0.05-0.2) was the fact if they received a promotion including household visits or not. A stronger effect (OR: 1.3, CI: 1.2-1.4) had the handwashing index, but the two variables are not independent since during the household visits training was provided on household water treatment as well as handwashing. Not significant was the channel used to disseminate the information, the data collected indicates that it does not make a great

difference if household visits for community education are conducted by promoters of an NGO, by community health workers or by members of a community based organization.
We therefore can conclude that community education through household visits, independent of the stakeholder carrying out the activity, is an important strategy for social marketing of HWTS products. Such an activity should be complemented by disseminating information through TV & Radio (OR: 0.28, CI:0.14-0.56).

The sales experiences showed that the marketing of products requires a sales force with sales experience and an entrepreneurial spirit that involves the definition of sales targets. Community based organizations or community health workers successfully can be used for selling products, but they need to be equipped with the adequate management skills and should have the motivation to make sufficient profit through the sale of the products.
Very promising is the approach of selling products through water supply utilities. Enterprises, providing a basic service have a good predisposition to distribute higher priced products since the collection of payment in installments can be added to the water bill.

Working with groups that do not have any know-how or experiences in product marketing and sale is not recommended since the risk for failure of the distribution mechanism is high.
Using promoters of an NGO for community education as well as product sale is not recommended as on one side, promoters often lack sales skills and on the other side, customers often approach representatives of an NGO with an attitude of getting something for free, which has a negative effect on their willingness to buy a product from an NGO's promoter.
Local entrepreneurs with small kiosks have sufficient sales experience but the sale of bulky and expensive products such as water filters is a challenge due to space limitations and challenges with payment in installments schemes. Fast moving consumer goods such as chlorination products can be sold well through small kiosks.

Questions on income levels and what an individual household would buy with 20 USD showed that the majority of household would spend their money on food (data not shown). The purchase of a higher priced product for water treatment such as a ceramic filter is a challenge for households living at the base of the pyramid. In Mwala District ceramic filters were only sold after the price was lowered from 17.5 USD to 10 USD. In the whole project area only a few customers bought their filters with an upfront payment. To offer customers the opportunity to pay for a filter in installments is an important element that facilitates product sale. If filters are handed out after the full payment has been received, a relation of trust between the customer and the seller is essential to motivate customers to buy a filter through such a scheme.

Intervention in Bolivia

Description of intervention sites

In Bolivia, two of the chosen areas were peri-urban areas within the municipality of Cochabamba: Villa Granado, is a middle class area where most people have access to piped water, but of low water quality (the water has odour and is coloured). In Villa Granado most people boil their water or they own sophisticated expensive water filters.

Valle Hermoso is part of the Cochabamba city but it is a peri urban area, located slightly outside of the city centre. The majority of people living there are migrants. The city of Cochabamba supplies water only twice a week to this area as water is rationed in the whole city and middle class areas are prioritized. Therefore, most people rely on water trucks, which are privately organized and illegal. The source of this water is mostly unknown and contaminated. 80 liters are supplied for 5 Bs. As a consequence most people buy 20 litre water bottles for drinking at a price of approximately 12 Bs (2 USD).

The third area was in the Province Arbieto about 45 Min drive away from Cochabamba. The two settlements called 20 de Octoubre and Alto Arrumani consist of several closely located villages. Households in this area get their drinking water through water trucks or collect it from a river.

The fourth area selected was in the Province of Chapare: Villa Tunari, located in a lowland area with tropical climate. Households in this area are connected to a gravity water supply system, which is not operated reliably. Therefore many families consume water bottled in 20 Liter bottles. These bottles cost 12 Bs (about 2 USD) and provide water for a family for about a week.

Establishment of the supply chain for products:

The Fundación SODIS assembles Ceramic Filters using ceramic candles imported from Brazil and locally produced plastic housings. The Filters are supplied to retailers on credit without any interest rates. Payment in installment schemes are offered to households and support the sale to low income households. The wholesale price of the ceramic filters is 190 Bs (26.5 USD), while the retail price is 220 Bs (31 USD), offering a profit margin of 30 Bs (4 USD).
Bags with bleach for chlorination are being sold in every shop and PET-bottles are available locally, therefore no special supply chain for the delivery of chlorine products or SODIS bottles was set up by FS.

Intervention in Area 1: Villa Tunari, Chapare region (Promotion: NGO / Sale: entrepreneur)

In Villa Tunari the promotion was done by a promoter from Fundación SODIS with a main focus on household visits: Three visits per household were conducted. During the first visit the promoter provided information about HWTS in general as well as hygiene and sanitation. In the second and third visit more emphasis was put on marketing of HWTS products and monitoring their use.

The sale of the Ceramic filters was done through a private institution, 'Junta del Suministro de agua Potable' (JASAP), which is administrating the piped water supply. JASAP provided most filters on credit, payable in three instalments. The instalment was automatically added to the monthly water bill. Filters were provided upfront since JASAP through adding the creditable amount to the water bill had a good control mechanism to assure payment.

Intervention in Area 2: 20 de Octubre and Alto Arrumani, Arbieto region (Promotion & Sale: Public Health System)

In Arbieto community education and product sale was done by Community Health Workers. Each household received two visits. During the first visit the health workers put the focus on providing general information about HWTS as well as hygiene and sanitation. During the second visit, more emphasis was put on marketing of HWTS products. The FS employee Xavi was supervising the health workers during the project period. In addition to the household visits, two workshops with the community leaders were conducted.

Intervention in Area 3: Valle Hermoso, Cochabamba region (Promotion & Sale: CBO)

In Valle Hermoso community education and product sale was done by a women group, which is part of the "Obispo Anaya" hygiene education program. Leaders of the women groups conduct two visits per household, in addition to several community workshops that were held together with the community leaders. The FS employee Xavi was supervising the women group during the project period.

Intervention in Area 4: Villa Granado, Cochbamba region (Promotion & Sale: NGO)

In Villa Grandado, community education and product sale was done by Promoters of the Fundación SODIS. Equal to Villa Tunari, three visits per each households were conducted.

Qualitative results, Bolivia

Area 1: Villa Tunari, Chapare region (Promotion: NGO / Sale: entrepreneur)

The private water supply utility "Junta del Suministro de agua Potable' (JASAP)" sold 15 filters for a price of 31 USD.

Similar to Kenya, also in Bolivia the model of combining filter sale through a water supply utility with community education through a promoter turned out to be effective. JASAP will continue with the sales of ceramic filters after the end of the research project. Even though the sales were relatively low, the model proved to be sustainable. Problems with sales were encountered during the implementation as several NGOs had handed out free products for household water treatment as Villa Tunari lies in a zone where several emergency reliefs interventions had taken place earlier.

In addition, JASAP did not actively market the water filters by themselves and they decided to sell the filters to their customer without a profit margin for JASAP. The justification for this was that JASAP should supply their customers with safe water but they are not able to meet that target. Customers

were charged the buying price (includes transport from Cochabamba to the JASAP office in Villa Tunari) of the ceramic filters of 220 Bs (around 30USD) per filter. (The pick-up price of the filters from the FS office is 190 Bs.).

Area 2: 20 de Octubre and Alto Arrumani, Arbieto region (Promotion & Sale: Public Health System)

The health center and the community health workers did not sell any filters.
In this area the health centre and health workers were responsible for the promotion as well as for the sale of products. The health centre is legally not allowed to sell any products to make profit. The Community health workers (CHW) were not formally organized into a group, and showed no desire to organise themselves to get involved into the sales. In addition, the health workers had very little interest to sell the filters in their leisure time. Therefore, this model was not successful.

Area 3: Valle Hermoso, Cochabamba region (Promotion & Sale: CBO)

The community organization “Obispo Anayo sold 114 filters for a price of 31 USD.
In Valle Hermoso the promotion and the sale of the filters was done through the women’s group, “Obispo Anayo”. The group had a dynamic working mode and had experience in selling smaller products, which resulted in very high sales numbers of ceramic filters.
Filters werde sold at a price of 220 Bs (around 30USD), with a profit margin of 30 Bs (about 4 USD) per filter sold. Fundación SODIS provided the filter to the women’s group on credit and collected the money from the group after the sale of the filter. The households had the possibility to buy the filters in instalments, however most households bought the filter with an up-front cash payment.
Each woman was in charge of several households and promoted and sold the water filters to her designated households. Obispo Anayo continues with the sale of ceramic water filters after the end of the implementation activities..
During the final data collection in Valle Hermoso however we could not find the same number filters sold through the women’s group in the project areas. Further investigations to find out to where the women’s group has sold the filters currently is still on going.

Area 4: Villa Granado, Cochbamba region (Promotion & Sale: NGO)

The NGO promoter sold 2 filters for 31 USD
In Villa Granado, the Fundación SODIS’ promoter Wilson Calle was responsible for the promotion as well as the sales of the water filters.
During the baseline data collection, many household were very interested to buy a filter. However this interest decreased after the FS conducted a drinking water quality test and the results showed that the water at that time was safe for drinking.
In addition, the promoter lacked the necessary sales skills and consequently he did not succeed to establish a good relation with the community from this urban area.
Thus, in Bolivia, the model of combining community education and product sale through the promoter of an NGO did not work very well.

Quantitative results Bolivia

Areas and willingness to pay

Area 1: Valle Hermoso. Intervention scheme: community education as well as product sale through a women's group

Area 2: Villa Granado. Intervention scheme: community education as well as product sale through the promoter of an NGO.

Area 3: Arbieto. Intervention scheme: community education as well as product sale through the community health workers of the public health system

Area 4: Villa Tunari. Intervention scheme: community education through the promoter of an NGO, product sale through a water utility and local entrepreneuers

The analysis of baseline data revealed significant difference between the different intervention sites. While the type of employments in Valle Hermoso and Villa Granado, two urban areas of Cochbamba, are comparable, Arbieto shows the highest level of self-employed households, while the highest agricultural employment can be found in Villa Tunari.

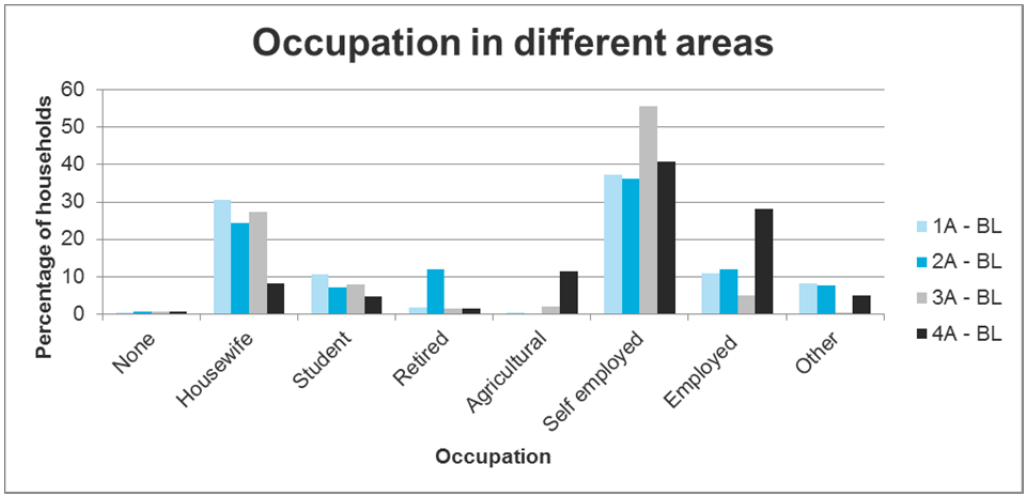


Fig 8. Occupation of people interviewed in the different intervention sites

Comparing the occupation with the willingness to pay for filters reveals a highly significant correlation of $\chi^2(49)=131.95$, with self-employed households showing the lowest willingness to pay.

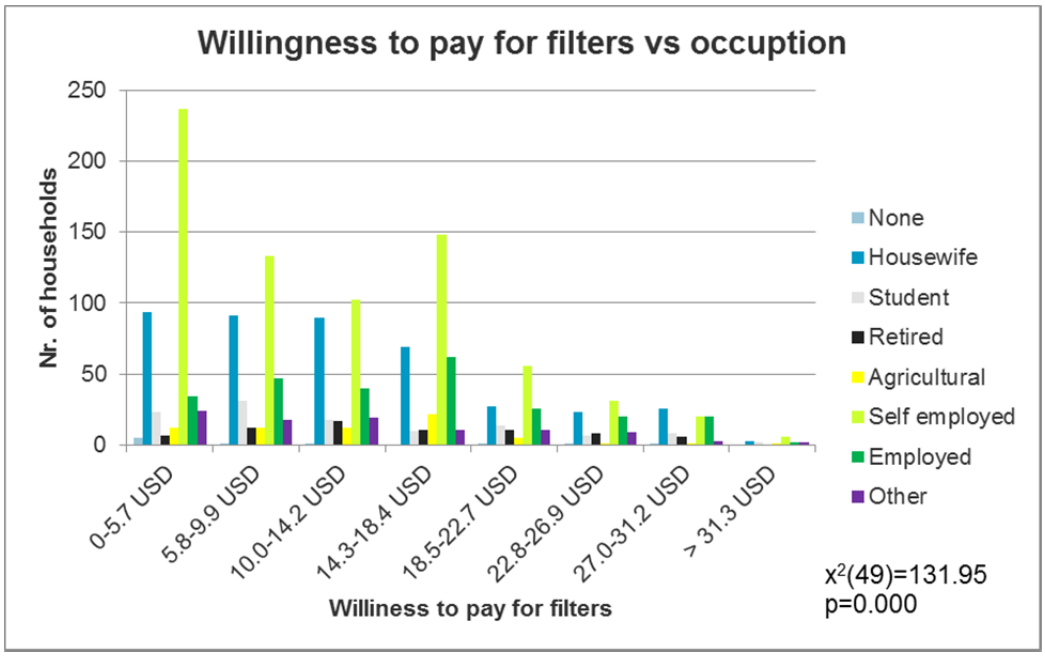


Fig 9. Willingness to pay for filters of households with different occupations

The willingness to pay for water filters was found to be highest in area 2, Villa Granado. In all regions the willingness to pay was found higher at baseline than after the intervention! The majority of all households (80.2% of all households at baseline and 85.4% after the intervention) stated that they would not be willing to pay more than 18.5 USD for a ceramic filter.

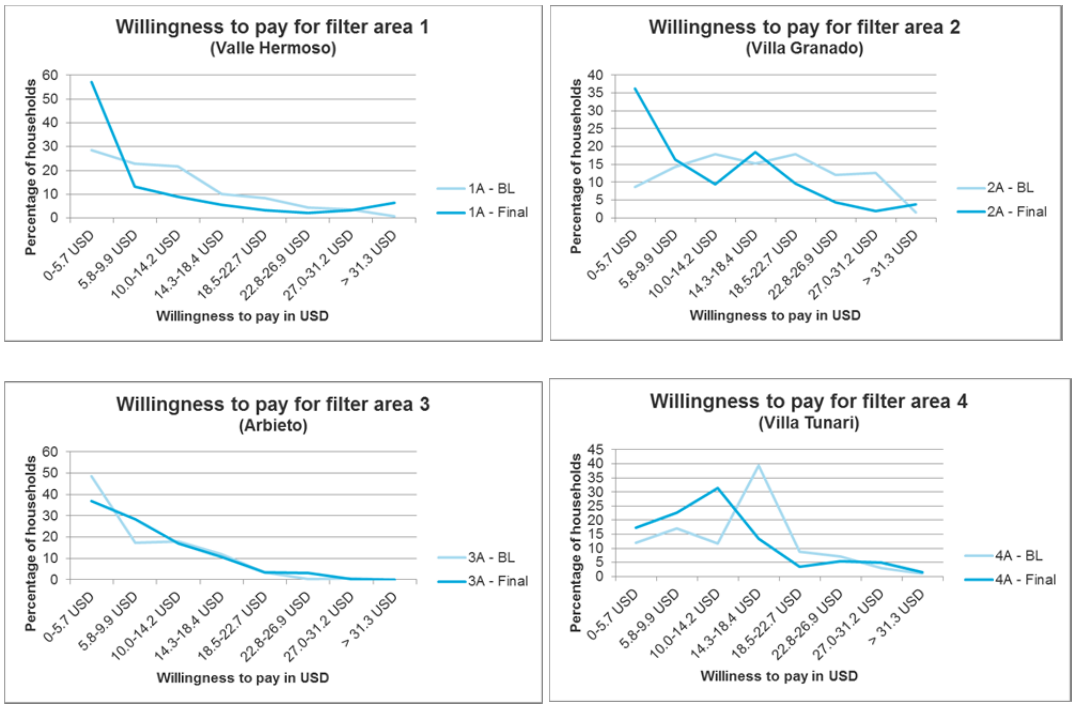


Fig 10. Willingness to pay for water filters in the different intervention sites

Also in Bolivia, a single factor analysis showed that the willingness to pay for water filters was highly significantly correlated with the income level (expressed through the amount of money available weekly).

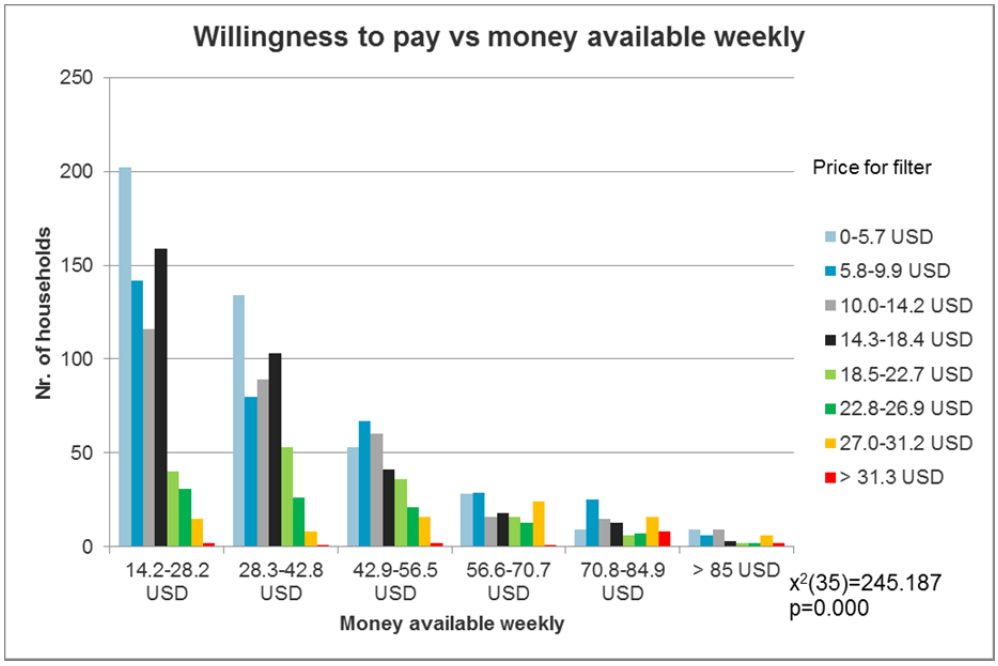


Fig 11. Willingness to pay for ceramic filters vs the household's amount of money available per week

Use of household water treatment and source of information

The analysis of HWTS use before and after the intervention in the different project areas revealed that for water treatment mainly boiling is used by 88.5% (69.1% at baseline) of the households and 25.5% (17.9% at baseline) of households in all regions use bottled water (20l gallons) for drinking water. Filtration (1.2%(bl) - 3.2%(ai)), Chlorination (0.3%(bl) - 3.6% (ai)) or Solar Disinfection (1.5%(bl)-9.6%(ai)) are used only marginally used at baseline as well as after the intervention, except for the use of ceramic filters which increased by 16% in area 4, Villa Tunari and by an average of 7.6% in all intervention regions.

The highest change in water treatment behaviour was found in area 3, Arbieto, where the use of HWTS increased by 17.9% from 74.1 to 92% and the frequent use of HWTS (defined as using the method often to always) increased by 31.3% from 52.1% to 83.4%.

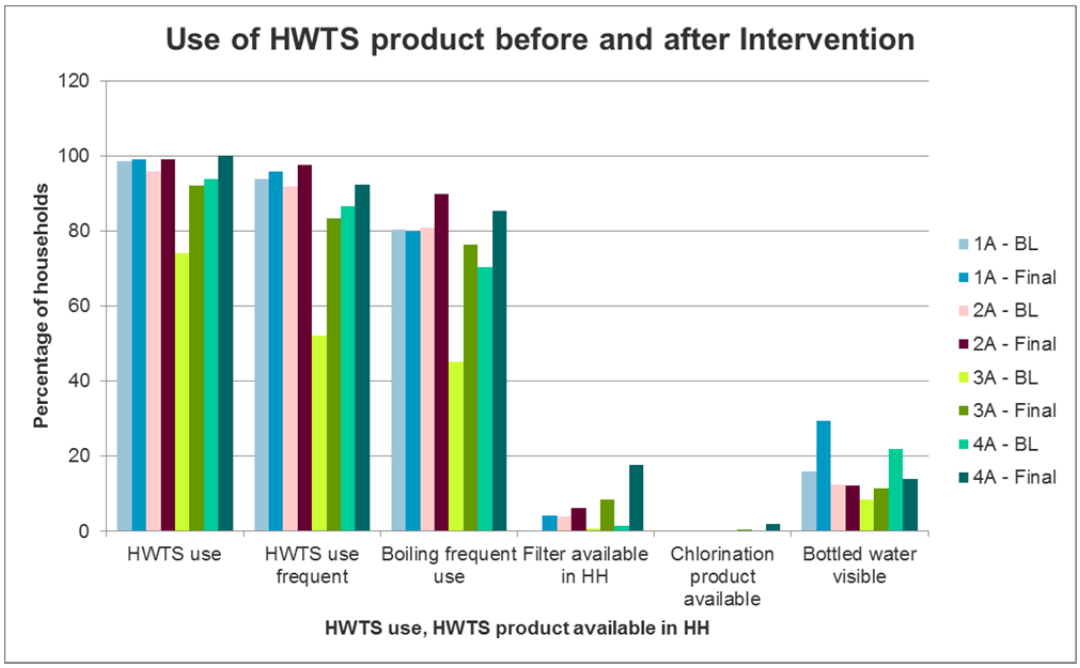


Fig 12. Use of HWTS and HWTS products before and after the intervention in 4 different sites

While the use of HWTS increased in all areas after the intervention, fewer households in all areas had the impression that their neighbours are using any method for household water treatment. The percentage of people stating that their neighbours are using HWTS decreased by 9.5% in area 1 (37.89-28.47%), 28.5% in area 2 (58.22-29.77%), 13.4% in area 3 (36.36-23.01%) and 0.74% in area 4 (34.99-34.25%)

Interestingly, we could not trace back the behaviour change in site 3, Arbieto to a particular information source as only 10.3% of household received information on household water treatment – through the health centre. In area 1, Valle Hermoso, the most important source of information was the women's group, reaching 51.5% of the households. In area 2, Villa Granado and in area 4 Villa Tunari, the most important source of information was the promoter, reaching 63% (area 2) and 98.4% (area 4) of all households.

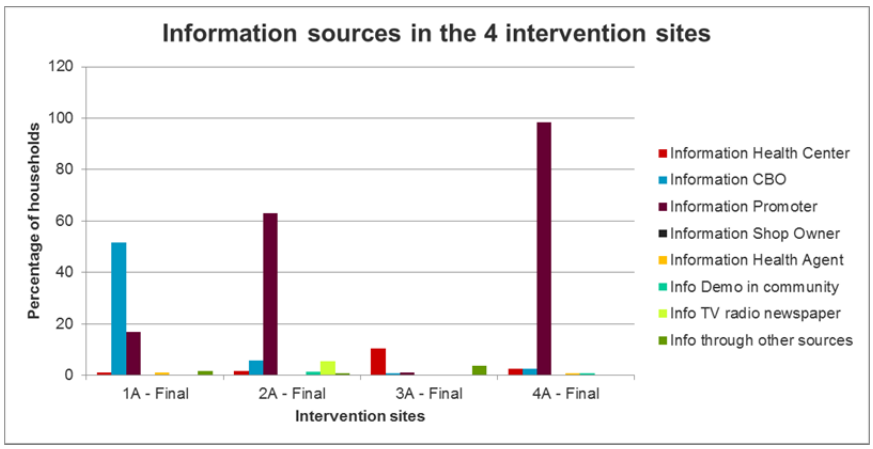


Fig 13. Information sources during the intervention in the 4 different intervention sites

Conclusions Bolivia

In Bolivia we encountered a large discrepancy between the number of filters sold in the different intervention sites and the number of filters found in the households during the final data collection:

Number of filters sold according to sales records of the Fundación SODIS:
Area 1: Valle Hermoso: 114 Filters sold
Area 2: Villa Granado: 2 Filters sold
Area 3: Arbieto Region: 0 Filters sold
Area 4: Villa Tunari, Chapare: 15 Filters sold

However, the following number of additional filters were found in the households during final data collection (the number does not include filters that were available in the household already during baseline data collection.
Area 1: Valle Hermoso: 12 additional filters in HH
Area 2: Villa Granado: 7 additional filters in HH
Area 3: Arbieto Region: 22 additional filters in HH
Area 4: Villa Tunari, Chapare: 46 additional filters in HH

In view of this discrepancy we are not yet in a position to draw any conclusions. We suspect that a third organization has distributed ceramic filters for water treatment during the time of our project intervention in Arbieto and Villa Tunari. Further investigations on the type and source of the additional filters in the households are currently going on. In addition, we are also assessing to where the women's group in Valle Hermoso sold their filters,

Annex

Data Sheet Comparing 4 Intervention sites, Baseline - Final
Data Sheet Baseline 4 Sites Intervention/Control
Data Sheet Final 4 Sites Intervention/Control
Questionnaire
Scientific Poster presented at the conference for Water & Health in Chapel Hill, USA, Oct 2013

Analysis Kenya, comparing different areas

1= Water supply utility (Thika), 2= Community health workers (Thika), 3= CBO's (Mwala), 4= Promoter of the NGO (Mwala

Area	1A - BL	1A - Final	Δ	2A - BL	2A - Final	Δ	3A - BL	3A - Final	Δ	4A - BL	4A - Final	Δ
N	293	310		298	303		317	299		312	299	
Occuption	1A - BL	1A - Final	Δ	2A - BL	2A - Final	Δ	3A - BL	3A - Final	Δ	4A - BL	4A - Final	Δ
None	9.2			5.9			0.6			2.2		
Housewife	24.6			12.4			5			3.5		
Student	0.7			2			1.9			1		
Retired	1			0.7			0			1.6		
Agricultural	35.2			40			73.5			69.2		
Selfemployed	13			26.1			9.8			10.3		
Employed	15			6.5			6.3			7.1		
Other	1.4			5.9			2.8			5.1		
N	301	310		305	303		310	299		308	299	
Turbid water	78.8			62.3			3.2			27.2		
N	301	310		305	303		310	299		308	299	
Money available weekly	1A - BL	1A - Final	Δ	2A - BL	2A - Final	Δ	3A - BL	3A - Final	Δ	4A - BL	4A - Final	Δ
1.1-5.4 USD	50.3			24.3			63.1			44.2		
5.5-10.9 USD	33.9			29.5			24.3			35.6		
11.0-16.5 USD	12.5			15.4			5.7			10.6		
16.6-21.9 USD	1.6			16.1			3.5			3.8		
22.0-27.4 USD	1			8.2			1.9			3.5		
> 27.5 USD	0.7			6.6			1.3			2.2		
N	**301**	**310**		**305**	**303**		**310**	**299**		**308**	**299**	
in percent												
HWTS use	64.4	85.9	21.5	60.7	69.3	8.6	58.7	81.1	22.4	60.6	87.5	26.9
HWTS use frequent	40.2	62.9	22.7	35.4	51.8	16.4	25.5	69.9	44.4	35.1	73.6	38.5
Boiling frequent use	11.3	19	7.7	3	10.9	7.9	4.5	9.6	5.1	15.6	25.9	10.3
Chlorination frequent use	29.9	37.3	7.4	31.1	31	-0.1	20.3	60.3	40	18.5	53.1	34.6
Filter frequent use	0.5	5.5	5	1.3	12.2	10.9	1	2.3	1.3	0	1.3	1.3
Filter use in percent	**0.7**	**6.1**	**5.4**	**1.3**	**13.5**	**12.2**	**1**	**2.3**	**1.3**	**0**	**1.6**	**1.6**
Filter use in numbers	**2**	**19**	**17**	**4**	**41**	**37**	**3**	**7**	**4**	**0**	**5**	**5**
N	194	311		253	303		317	302		312	305	
Show system used the most												
Filter visible and used	0.5	5.1	4.6	1.6	11.6	10	0.6	2	1.4	0	1	1
Filter visible and dry	1	0.3	-0.7	0	0.3	0.3	0.6	0	-0.6	0	0.7	0.7
Chlorination product available	68.6	31.8	-36.8	55.7	33.7	-22	30	57.3	27.3	33	43.3	10.3
PUR available	8.2	9	0.8	1.2	1.3	0.1	0.9	2.6	1.7	0	1.3	1.3
Filter with cloth visible	0	0	0	0	0	0	0	0.3	0.3	0	0	0
SODIS bottles in the sun	0	1	1	0	0.3	0.3	0	1	1	0	1.3	1.3
SODIS bottles in the house	0	1.3	1.3	0	1.7	1.7	0	0.3	0.3	0	1.3	1.3
System not visible (boiling)	3.1	20.3	17.2	3.2	11.2	8	11.4	8.6	-2.8	17.3	23.6	6.3
Bottled water visible	0	0	0	0	0	0	0	0	0	0	0	0
No system available	18.6	31.2	12.6	38.3	39.9	1.6	56.5	27.8	-28.7	49.7	26.6	-23.1
HWTS system in HH incl. Boiling	81.4	68.8	-12.6	61.7	60.1	-1.6	43.5	72.2	28.7	50.3	73.4	23.1
HWTS system visible in HH	78.4	48.6	-29.8	58.5	48.8	-9.7	32.2	63.6	31.4	33	49.8	16.8
Filter visible and used (Nrs)	1	16	15	4	35	31	2	6	4	0	3	3
Filter visible and dry (Nrs)	2	1	-1	0	1	1	2	0	-2	0	2	2
Filter visible in HH total (Nrs)	3	17	14	4	36	32	4	6	2	0	5	5
N	301	311		305	303		310	302		308	305	
in percent												
Know boiling	72.9	77.5	4.6	61	91.7	30.7	71.3	90.1	18.8	76.6	88.2	11.6
Know chlorination	84	81.7	-2.3	88.5	88.4	-0.1	77.9	92.1	14.2	79.5	85.2	5.7
Know PUR	17.6	32.5	14.9	17	23.1	6.1	20.2	48.7	28.5	12.5	32.1	19.6
Know Filtration with Cloth	9.2	16.4	7.2	5.2	10.6	5.4	2.5	6.3	3.8	1.9	4.9	3
Know SODIS	1	18.6	17.6	0	27.7	27.7	0	35.8	35.8	0.3	40.0	39.7
Know Filter	4.9	22.8	17.9	1	49.5	48.5	4.4	39.1	34.7	3.8	31.8	28
Does not know HWTS	4.6	4.8	0.2	8.5	3.0	-5.5	18.3	3.3	-15	11.5	2.3	-9.2
N	306			305			317			312		
in percent												
Information source Radio	94.1			92.8			83			75.3		
Information source Newspaper	8.2			4.9			3.5			1.6		
Information source TV	28.1			16.7			3.5			1.9		
Information source Com-Meeting	18.3			19.7			35			43.3		
Information source Neighbours	13.4			23.6			30.6			42		
N	306			305			317			312		
Information Health Center		8.7			15.5			6.6			8.2	
Information CBO		17.0			18.8			65.6			6.2	
Information Promoter		24.4			20.5			30.8			83.0	
Information Shop Owner		4.2			5.3			1.0			0.3	
Information Com. Health Worker		14.5			33.3			0.3			0.7	
Information Barazza		7.4			2.6			0.7			0.0	
Infomation Demo in town		1.0			0.0			0.7			0.3	
Information TV/Radio/Newpaper		2.6			6.3			0.3			0.7	
Information others		1.6			0.0			0.0			0.0	
Received promotion		61.7			62.4			91.1			90.8	
Did find promotion helpful		58.2			57.8			90.4			89.2	
Promotion changed behaviour		56.6			56.1			79.8			87.9	
N	306			305			317			312		
raw water has no impact	6.2	0.6	-5.6	3.6	1.3	-2.3	7.3	1.0	-6.3	8.7	2.6	-6.1
raw water causes Diarrhoea	40.8	62.4	21.6	49.5	45.9	-3.6	53.6	78.8	25.2	46.5	76.1	29.6
What would you purchase with 2000 KSH	in percent											
Radio	5.6	3.9	-1.7	3.7	3.6	-0.1	3.2	1.7	-1.5	1.9	2.3	0.4
Chicken	12.6	13.5	0.9	6.7	10.2	3.5	7.3	4.6	-2.7	3.8	6.6	2.8
Mobile Phone	10.2	11.3	1.1	9.8	7.3	-2.5	2.2	2	-0.2	1.3	3.3	2.0
Water Filter	12.3	25.4	13.1	20.5	23.4	2.9	2.2	15.2	13.0	2.2	12.5	10.3
Goat	20.4	7.4	-13.0	15.5	6.3	-9.2	20.3	18.5	-1.8	21.2	20.7	-0.5
Food	31.9	34.1	2.2	27.9	38.6	10.7	18	23.8	5.8	23.1	20	-3.1
Clothes	6.3	10.6	4.3	9.4	13.5	4.1	1.9	4.3	2.4	1	3.6	2.6
School Fees	0.7	9.3	8.6	4.4	5.6	1.2	19.3	28.8	9.5	19.2	20.7	1.5
Start own business	0	1.3	1.3	0	2	2.0	2.2	2.3	0.1	1.3	4.3	3.0
Invest the money	0	5.1	5.1	0.3	5.3	5.0	4.1	4	-0.1	6.4	5.2	-1.2
Buy household goods	0	10.9	10.9	1.7	18.8	17.1	19.3	32.1	12.8	18.6	23.6	5.0
Willingness to pay for filters	306			305			316			312		
	1A - BL	**1A - Final**	**Δ**	**2A - BL**	**2A - Final**	**Δ**	**3A - BL**	**3A - Final**	**Δ**	**4A - BL**	**4A - Final**	**Δ**
0-5.4 USD	41.9	48.2	6.3	41.4	44.2	2.8	63.8	59.3	-4.5	55.4	51.5	-3.9
5.5-10.9 USD	31.3	29.6	-1.7	23.4	41.3	17.9	23.3	36.8	13.5	31.4	43.9	12.5
11-16.4 USD	15.5	17	1.5	13.2	12.5	-0.7	10.4	3.3	-7.1	7.1	3.6	-3.5
16.5-21.9 USD	6.9	4.8	-2.1	10.5	2	-8.5	1.3	0.3	-1.0	5.1	1	-4.1

22-27.4 USD	1	0	-1.0	8.2	0	-8.2	0.6	0	-0.6	1	0	-1.0
27.5-32.9 USD	2.7	0.3	-2.4	2.3	0	-2.3	0.3	0	-0.3	0	0	0.0
33-38.4 USD	0.7	0	-0.7	1	0	-1.0	0.3	0.3	0.0	0	0	0.0
> 38.5 USD	0	0	0.0	0	0	0.0	0.6	0	-0.6	0	0	0.0
N	303	311		305	303		316	302		312	305	
Baseline-Importance of treating drinking water	in numbers											
not important at all (0)	6	3	-3.0	0	0	0.0	11	1	-10.0	8	0	-8.0
not very important (1)	12	12	0.0	0	7	7.0	12	1	-11.0	10	4	-6.0
does not matter (2)	14	9	-5.0	23	33	10.0	29	7	-22.0	32	3	-29.0
a bit important (3)	68	78	10.0	76	94	18.0	93	85	-8.0	114	111	-3.0
very important (4)	203	209	6.0	206	169	-37.0	171	208	37.0	148	187	39.0
Rating of importance	**3.49**	**3.54**	**0.1**	**3.60**	**3.40**	**-0.2**	**3.27**	**3.65**	**0.4**	**3.23**	**3.58**	**0.3**
N	303	307		305	302		316	291		312	288	
Baseline-Percentage of neighbours using HWTS	in percent											
Almost nobody (0%)	16.6	0	-16.6	19.4	0	-19.4	31.3	0	-31.3	12.2	0	-12.2
some of them (25%)	54	23.1	-30.9	51.6	31.8	-19.8	41.5	6.2	-35.3	54.2	6.9	-47.3
half of them (50%)	19.2	45	25.8	15.5	34.1	18.6	15.2	32.6	17.4	27.9	44.1	16.2
most of them (75%)	10.3	23.5	13.2	13.2	18.5	5.3	12	15.8	3.8	5.8	13.2	7.4
almost all (100%)	0	8.5	8.5	0.3	15.6	15.3	0	45.4	45.4	0	35.8	35.8
	in numbers											
Almost nobody (0%)	50	0	-50.0	59	0	-59.0	99	0	-99.0	38	0	-38.0
some of them (25%)	163	71	-92.0	157	96	-61.0	131	18	-113.0	169	20	-149.0
half of them (50%)	58	138	80.0	47	103	56.0	48	95	47.0	87	127	40.0
most of them (75%)	31	72	41.0	40	56	16.0	38	46	8.0	18	38	20.0
almost all (100%)	0	26	26.0	1	47	46.0	0	132	132.0	0	103	103.0
Average Percentag of N using	**30.69**	**54.32**	**23.6**	**30.74**	**54.47**	**23.7**	**26.98**	**75.09**	**48.1**	**31.81**	**69.44**	**37.6**
HWTS use vs Turbidity					$x^2(1)=14.767$ p=0.000							
HWTS use vs Occupation					$x^2(1)=4.056$ p=0.044					$x^2(7)=18.84$ p=0.009		
HWTS use vs Education					$x^2(2)=14.999$ p=0.001							
HWTS use vs Importance of treating drinking water	$x^2(4)=72.13$ p=0.000	$x^2(4)=80.057$ p=0.000		$x^2(2)=33.200$ p=0.000	$x^2(3)=71.364$ p=0.000		$x^2(4)=57.361$ p=0.000	$x^2(3)=80.349$ p=0.000		$x^2(4)=55.488$ p=0.000	$x^2(3)=27.316$ p=0.000	
HWTS use vs drinking raw water is good for health	$x^2(6)=30.42$ p=0.000	$x^2(5)=19.842$ p=0.001		$x^2(6)=26.747$ p=0.000	$x^2(3)=16.563$ p=0.001		$x^2(6)=58.547$ p=0.000	$x^2(6)=20.828$ p=0.002		$x^2(5)=81.519$ p=0.000	$x^2(6)=26.945$ p=0.000	
HWTS use vs how many neighbours are using	$x^2(3)=55.37$ p=0.000	$x^2(4)=15.650$ p=0.004		$x^2(4)=29.277$ p=0.000	$x^2(4)=17.901$ p=0.001		$x^2(3)=14.504$ p=0.002	$x^2(5)=63.640$ p=0.000		$x^2(3)=22.943$ p=0.000	$x^2(5)=33.353$ p=0.000	
HWTS use vs info source radio							$x^2(1)=14.823$ p=0.022			$x^2(1)=5.395$ p=0.020		
HWTS use vs info source TV	$x^2(1)=6.55$ p=0.011											
HWTS use vs info source ComMeet				$x^2(1)=9.781$ p=0.001						$x^2(1)=4.214$ p=0.040		
HWTS use vs info source neighbours				$x^2(1)=6.629$ p=0.010			$x^2(1)=11.32$ p=0.001			$x^2(1)=3.847$ p=0.050		
HWTS use vs HWTS promotion received		$x^2(1)=9.411$ p=0.002			$x^2(1)=8.014$ p=0.005			$x^2(1)=9.259$ p=0.002			$x^2(1)=4.446$ p=0.035	
HWTS use vs info through health center		$x^2(1)=4.872$ p=0.027			$x^2(1)=6.528$ p=0.011							
HWTS use vs info through CBO					$x^2(1)=4.285$ p=0.038							
HWTS use vs info through Promoter												
HWTS use vs info through shop owner												
HWTS use vs info through community health worker											$x^2(1)=14.145$ p=0.000	
HWTS use vs info through community meeting												
HWTS use vs info through demonstration in town												
HWTS use vs info through TV, radio, newspaper					$x^2(1)=3.876$ p=0.049							
HWTS use vs info through other												
HWTS use vs found promotion helpful		$x^2(2)=12.488$ p=0.002			$x^2(2)=28.513$ p=0.002			$x^2(2)=10.716$ p=0.005			$x^2(2)=26.550$ p=0.000	
HWTS use vs promotion changed behaviour		$x^2(2)=16.287$ p=0.000			$x^2(2)=31.677$ p=0.000			$x^2(2)=138.821$ p=0.000			$x^2(2)=71.713$ p=0.000	
HWTS use vs monthly expenditure	$x^2(6)=18.16$ p=0.006				$x^2(7)=38.438$ p=0.000		$x^2(6)=14.823$ p=0.022	$x^2(6)=22.333$ p=0.001		$x^2(6)=18.784$ p=0.005		
HWTS use vs monthly income	$x^2(6)=12.43$ p=0.053			$x^2(6)=15.930$ p=0.014			$x^2(6)=20.522$ p=0.002			$x^2(6)=20.649$ p=0.002		
HWTS use vs money available per week		$x^2(7)=16.692$ p=0.044					$x^2(5)=23.641$ p=0.000			$x^2(5)=22.425$ p=0.000		
HWTS use vs handwashing index	$x^2(4)=34.25$ p=0.000			$x^2(3)=13.213$ p=0.004	$x^2(4)=13.630$ p=0.009		$x^2(5)=22.443$ p=0.000	$x^2(4)=30.538$ p=0.000			$x^2(5)=17.503$ p=0.004	
HWTS use vs type of sanitation					$x^2(3)=9.899$ p=0.019						$x^2(3)=9.773$ p=0.044	
Frequent use chlorination vs willingness to pay chlorine		$x^2(5)=14.273$ p=0.014								$x^2(3)=31.222$ p=0.000	$x^2(2)=6.324$ p=0.042	
Frequent use filter vs willingness to pay for filter	$x^2(6)=19.26$ p=0.004	$x^2(4)=15.513$ p=0.004			$x^2(3)=13.854$ p=0.003		$x^2(7)=114.401$ p=0.000	$x^2(4)=78.589$ p=0.000			$x^2(3)=8.120$ p=0.044	

Frequent HWTS use vs Turbidity	ns	ns		$x^2(1)=14.25$ p=0.000			ns			ns	$x^2(1)=18.4$ p=0.000	
FrequentHWTS use vs Occupation	$x^2(7)=14.25$ p=0.008	ns		$x^2(7)=15.95$ p=0.026			ns			$x^2(7)=15.72$ p=0.028		
Frequent HWTS use vs Education	ns	$x^2(2)=7.4$ p=0.025		ns	$x^2(2)=14.17$ p=0.001			$x^2(2)=5.34$ p=0.069				
Frequent HWTS use vs Importance of treating drinking water	$x^2(4)=68.62$ p=0.008	$x^2(4)=29.03$ p=0.000		$x^2(2)=32.07$ p=0.000	$x^2(3)=39.65$ p=0.000		$x^2(3)=19.66$ p=0.001	$x^2(4)=90.49$ p=0.000		$x^2(4)=25.665$ p=0.000	$x^2(2)=45.911$ p=0.000	
Frequent HWTS use vs drinking raw water has no impact	ns	ns		ns			$x^2(1)=8.5$ p=0.004	ns		$x^2(1)=4.5$ p=0.034	$x^2(1)=5.5$ p=0.019	
Frequent HWTS use vs drinking raw water causes diarrhoea	$x^2(1)=11.65$ p=0.001	$x^2(1)=6.61$ p=0.010		ns	ns		ns	ns		ns	ns	
Frequent HWTS use vs how many neighbours are using	$x^2(3)=35.58$ p=0.000	$x^2(3)=33.35$ p=0.000		$x^2(4)=15.21$ p=0.004	$x^2(4)=29.32$ p=0.000		$x^2(3)=27.81$ p=0.000	$x^2(3)=64.23$ p=0.000		$x^2(3)=20.21$ p=0.000	$x^2(3)=42.71$ p=0.000	
FrequentHWTS use vs info source radio	ns			ns			$x^2(1)=6.4$ p=0.011			$x^2(1)=7.34$ p=0.006		
Frequent HWTS use vs info source TV	$x^2(1)=3.04$ p=0.081			$x^2(1)=6.492$ p=0.001			$x^2(1)=5.072$ p=0.024					
Frequent HWTS use vs info source ComMeet	$x^2(1)=24.99$ p=0.000			$x^2(1)=18.41$ p=0.000			$x^2(1)=18.55$ p=0.000			$x^2(1)=16.74$ p=0.000		
Frequent HWTS use vs info source neighbours	ns			$x^2(1)=12.411$ p=0.000			$x^2(1)=16.14$ p=0.000			$x^2(1)=15.34$ p=0.000		
Frequent HWTS use vs HWTS promotion received		$x^2(1)=6.13$ p=0.013			$x^2(1)=9.621$ p=0.002			$x^2(1)=6.67$ p=0.010			$x^2(1)=16.54$ p=0.000	
Frequent HWTS use vs info through health center		ns			ns			ns			ns	
Frequent HWTS use vs info through CBO		ns			ns			ns			ns	
Frequent HWTS use vs info through Promoter		$x^2(1)=5.02$ p=0.025			ns			ns			ns	
Frequent HWTS use vs info through shop owner		ns			ns			ns			ns	
Frequent HWTS use vs info through community health worker		ns			$x^2(1)=3.5$ p=0.062			ns			$x^2(1)=5.61$ p=0.018	
Frequent HWTS use vs info through community meeting		ns			$x^2(1)=7.64$ p=0.006			ns			ns	
Frequent HWTS use vs info through demonstration in town		ns			ns			ns			ns	
Frequent HWTS use vs info through TV, radio, newspaper		ns			ns			ns			ns	
Frequent HWTS use vs info through other		ns			ns			ns			ns	
Frequent HWTS use vs found promotion helpful		$x^2(2)=7.07$ p=0.029			$x^2(2)=21.58$ p=0.000			$x^2(2)=7.14$ p=0.028			$x^2(2)=14.48$ p=0.001	
Frequent HWTS use vs promotion changed behaviour		$x^2(2)=8.62$ p=0.013			$x^2(2)=21.63$ p=0.000			$x^2(2)=94.9$ p=0.000			$x^2(2)=33.76$ p=0.000	
Frequent HWTS use vs monthly expenditure	ns	ns		$x^2(6)=24.69$ p=0.000	$x^2(6)=22.23$ p=0.002		ns	$x^2(6)=24.993$ p=0.000		ns	$x^2(7)=35.49$ p=0.000	
Frequent HWTS use vs monthly income	ns	ns		ns	ns		ns	ns		ns	ns	
Frequent HWTS use vs money available per week	$x^2(5)=18.95$ p=0.002	ns		$x^2(5)=26.48$ p=0.000	$x^2(6)=21.2$ p=0.002		ns	$x^2(4)=9.96$ p=0.041		ns	ns	
Frequent HWTS use vs handwashing index		$x^2(4)=13.46$ p=0.009		$x^2(6)=24.69$ p=0.000	$x^2(4)=13.29$ p=0.010			$x^2(4)=50.67$ p=0.000			$x^2(5)=25.96$ p=0.000	
Frequent HWTS use vs type of sanitation	ns	ns		ns	$x^2(3)=17.24$ p=0.001		ns	$x^2(3)=17.09$ p=0.002		ns	ns	
Freqent HWTS use vs willingness to pay for filter	$x^2(6)=18.33$ p=0.005	ns		ns	ns		$x^2(7)=50.50$ p=0.000	$x^2(4)=31.25$ p=0.000		$x^2(4)=22.94$ p=0.000	$x^2(4)=16.671$ p=0.001	

Analysis Bolivia, comparing different areas

A = with promotion, B= without promotion

1= Women group Valle Hermoso, 2= FS Promoter Villa Granado, 3= Health centre Arbieto, 4= entrepreneurs Villa Tunar

Area	1A - BL	1A - Final	Δ	2A - BL	2A - Final	Δ	3A - BL	3A - Final	Δ	4A - BL	4A - Final	Δ
N	292	303		311	320		317	314		442	319	
Occupation	1A - BL	1A - Final	Δ	2A - BL	2A - Final	Δ	3A - BL	3A - Final	Δ	4A - BL	4A - Final	Δ
None	0.3			0.6			0.6			0.7		
Housewife	30.5			24.4			27.4			8.1		
Student	10.6			7.1			7.9			4.8		
Retired	1.7			11.9			1.3			1.4		
Agricultural	0.3			0			1.9			11.3		
Self employed	37.3			36.3			55.5			40.7		
Employed	11			11.9			5			28.1		
Other	8.2			7.7			0.3			5		
N	292	303		317	320		315	314		446	319	
Money available weekly	1A - BL	1A - Final	1-mean	2A - BL	2A - Final	2-mean	3A - BL	3A - Final	3-mean	4A - BL	4A - Final	4-mean
14.2-28.2 USD	37	19.8	28.4	7.9	19.3	13.6	57.3	37.7	47.5	55.6	12.8	34.2
28.3-42.8 USD	31.8	33.8	32.8	23.7	47.8	35.8	29.4	34.5	32.0	28.3	26.3	27.3
42.9-56.5 USD	19.5	24.8	22.2	34.1	20.3	27.2	7.7	24.2	16.0	7.6	23.7	15.7
56.6-70.7 USD	6.8	8.3	7.6	18	5.3	11.7	3.5	3.5	3.5	3.1	17.6	10.4
70.8-84.9 USD	2.7	13.3	8.0	12.3	3	7.7	1.4	0	0.7	4	5.4	4.7
> 85 USD	2.1	0	1.1	4.1	4.3	4.2	0.7	0	0.4	1.3	14.1	7.7
N	293	303		318	320		317	314		449	319	
HWTS use	98.6	99	0.4	95.9	99.1	3.2	74.1	92	17.9	93.9	100	6.1
HWTS use frequent	93.9	95.7	1.8	91.8	97.5	5.7	52.1	83.4	31.3	86.6	92.2	5.6
Boiling frequent use	80.2	79.9	-0.3	80.8	89.7	8.9	45.1	76.4	31.3	70.4	85.3	14.9
Chlorination frequent use	0.3	0.2	-0.1	0.6	4.1	3.5	0.3	1.9	1.6	0	7.5	7.5
Filter frequent use	0.7	4.6	3.9	5	6.9	1.9	0	0.3	0.3	0.2	2.8	2.6
Filtration with a cloth frequent use	0	1	1	0	1.3	1.3	0.3	0	-0.3	0.2	1.9	1.7
SODIS frequent use	3.1	14.5	11.4	0	2.2	2.2	1.6	8.9	7.3	0.4	70.8	70.4
Bottled water frequent use	21.2	39.3	18.1	17.6	28.4	10.8	7.6	12.1	4.5	16.9	21.9	5
Filter use in percent	**0.7**	**4.7**	**4**	**5.3**	**6.9**	**1.6**	**0**	**0.3**	**0.3**	**0.4**	**2.8**	**2.4**
Filter use in numbers	**2**	**14**	**12**	**17**	**22**	**5**	**0**	**1**	**1**	**2**	**9**	**7**
N	291	303		310	320		314	314		446	319	
Show system used the most												
Filter visible and used	0	4.2	4.2	3.8	5.9	2.1	0.6	8.3	7.7	1.3	16.3	15
Filter visible and dry	0	0	0	0	0.3	0.3	0	0	0	0.2	1.3	1.1
Chlorination product available	0	0	0	0	0	0	0	0.3	0.3	0	2	2
Filter with cloth visible	0	0	0	0	0	0	0.3	0.3	0	1.6	0.3	-1.3
SODIS bottles in the sun	1.4	1.1	-0.3	0.3	0.7	0.4	0.3	11.8	11.5	1.6	7.6	6
SODIS bottles in the house	1	1.1	0.1	0	0	0	0.9	3.8	2.9	0.9	1	0.1
System not visible (boiling)	80.2	48.8	-31.4	80.8	79.1	-1.7	64	56.4	-7.6	59.2	57.5	-1.7
Bottled water visible	15.8	29.5	13.7	12.3	12.1	-0.2	8.5	11.4	2.9	22	14	-8
No system available	0	15.4	15.4	0	2	2	24.3	7.6	-16.7	13.2	0	-13.2
Filter visible and used (Nrs)	**0**	**12**	**12**	**12**	**18**	**6**	**2**	**24**	**22**	**6**	**49**	**43**
Filter visible and dry (Nrs)	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**4**	**3**
Filter visible in HH total	**0**	**12**	**12**	**12**	**19**	**7**	**2**	**24**	**22**	**7**	**53**	**46**
Know boiling	91.5	94.7	3.2	81.4	93.8	12.4	70.3	87.3	17	70.6	90.6	20
Know chlorination	72	23.4	-48.6	6.3	39.1	32.8	4.4	13.4	9	2.2	18.5	16.3
Know Filtration with cloth	1	10.6	9.6	0	12.5	12.5	1.9	1.9	0	2	4.1	2.1
Know SODIS	28.7	42.6	13.9	4.7	25.6	20.9	4.7	16.6	11.9	4	29.2	25.2
Know Filter	3.1	21.1	18	6.3	32.5	26.2	0.6	8.9	8.3	7.1	4.1	-3
Know Bottled water	30	46.5	16.5	21.7	35	13.3	8.5	16.6	8.1	22	39.8	17.8
Does not know HWTS	5.8	0	-5.8	10.7	0.9	-9.8	26.2	8.3	-17.9	4.7	0.3	-4.4
N	293			318			317			449		
Information source Radio	67.2			66.4			58.7			33		
Information source Newspaper	23.2			48.7			79			11.1		
Information source TV	96.2			94.3			81.7			81.5		
Information source Community mee	7.2			17.6			0.9			6		
Information source Neighbours	16.4			10.7			3.3			1.8		
Information source Internet	7.5			16.7			0			1.8		
Information Health Center		1			1.6			10.5			2.5	
Information CBO		51.5			5.6			0.6			2.5	
Information Promoter		16.8			63			1			98.4	
Information Shop Owner		0			0			0			0.3	
Information Health Agent		1			0.3			0			0.6	
Info Demo in community		0			1.3			0			0.6	
Info TV radio newspaper		0.3			5.3			0			0	
Info through other sources		1.7			0.6			3.8			0	
Received promotion		69.6			67.5			15.6			1	
N		212			216			49			219	
Did find promotion helpful		83.5			78.7			89.9			87.8	
Promotion changed behaviour		69.3			53.2			77.6			85	
N	293	303		318	320		317	314		449	319	
Impact raw water - none	6.1	5.3	-0.8	13.5	0.6	-12.9	27.8	18.5	-9.3	0.9	2.2	1.3
Impact raw water - Diarrhoea	62.5	67.3	4.8	39.6	57.2	17.6	34.1	61.8	27.7	61.9	75.2	13.3
What would you purchase for 250 Bs - N	291			316			310			444		
Radio	0.3	0.7	0.4	0.6	0.6	0	2.3	15.6	13.3	0.9	8.5	7.6
Chicken	0	1.3	1.3	0.3	0.3	0	2.3	8.3	6	1.4	10.7	9.3
Mobile phone	0.3	2.6	2.3	0.3	3.4	3.1	2.6	5.1	2.5	2.9	4.1	1.2
Water filter	4.1	9.2	5.1	12	4.4	-7.6	2.9	6.4	3.5	4.3	27	22.7
Food	62.2	32	-30.2	58.9	53.1	-5.8	69.7	33.1	-36.6	10.4	9.7	-0.7
Cloth	7.2	11.9	4.7	7.3	9.7	2.4	8.4	13.4	5	17.3	8.8	-8.5
School fees	6.2	4.6	-1.6	0.6	0.3	-0.3	1.3	5.7	4.4	19.6	1.6	-18
Start own business	1	4	3	0.3	0.3	0	0.6	2.9	2.3	1.6	3.8	2.2
Invest money	17.9	15.8	-2.1	15.8	6.3	-9.5	7.1	3.2	-3.9	17.3	21	3.7
Household goods	0.7	17.8	17.1	3.8	21.6	17.8	2.9	6.4	3.5	24.3	5	-19.3
N	289			315			306			444		

Willigness to pay - water filter	1A - BL	1A - Final	Δ	2A - BL	2A - Final	Δ	3A - BL	3A - Final	Δ	4A - BL	4A - Final	Δ
0-5.7 USD	28.4	57.1	28.7	8.6	36.3	27.7	48.7	36.9	-11.8	11.9	17.2	5.3
5.8-9.9 USD	22.8	13.2	-9.6	14.3	16.3	2	17.3	28.3	11	17.1	22.6	5.5
10.0-14.2 USD	21.8	8.9	-12.9	17.8	9.4	-8.4	18	16.9	-1.1	11.7	31.3	19.6
14.3-18.4 USD	10	5.6	-4.4	15.2	18.4	3.2	11.8	10.8	-1	39.4	13.5	-25.9
18.5-22.7 USD	8.3	3.3	-5	17.8	9.7	-8.1	3.3	3.5	0.2	8.8	3.4	-5.4
22.8-26.9 USD	4.5	2.3	-2.2	12.1	4.4	-7.7	0.3	3.2	2.9	7	5.3	-1.7
27.0-31.2 USD	3.5	3.3	-0.2	12.7	1.9	-10.8	0.7	0.3	-0.4	2.9	5	2.1
> 31.3 USD	0.7	6.3	5.6	1.6	3.8	2.2	0	0	0	1.1	1.6	0.5
N	292	303		316	320		316	314		447	319	
Baseline-Importance of treating drinking water	in numbers	in numbers										
not important at all (0)	0	2	2	1	0	-1	0	46	46	1	4	3
not very important (1)	1	0	-1	5	2	-3	13	4	-9	2	0	-2
does not matter (2)	4	3	-1	3	11	8	34	4	-30	8	3	-5
a bit important (3)	216	238	22	226	241	15	255	219	-36	345	223	-122
very important (4)	71	60	-11	81	66	-15	14	41	27	91	89	-2
Rating of importance	**3.22**	**3.17**	-0.05	**3.21**	**3.16**	-0.05	**2.85**	**2.65**	**-0.20**	**3.17**	**3.23**	0.06
N	285	303		304	320		306	314		443	**319**	
Baseline-Percentage of neighbours using HWTS	in percent	in percent										
Almost nobody (0%)	21.1	29.7	8.6	19.4	43.4	24	43.8	36.3	-7.5	14.7	11.6	-3.1
some of them (25%)	39.3	43.6	4.3	12.2	28.4	16.2	20.9	47.1	26.2	51	47	-4
half of them (50%)	17.5	11.6	-5.9	15.8	4.7	-11.1	2.6	6.1	3.5	16.3	35.1	18.8
most of them (75%)	11.2	13.5	2.3	21.4	12.5	-8.9	11.4	9.2	-2.2	15.8	5.3	-10.5
almost all (100%)	10.9	1.7	-9.2	31.3	10.9	-20.4	21.2	1.3	-19.9	2.3	0.9	-1.4
	in numbers	in numbers							0			0
Almost nobody (0%)	60	90	30	59	139	80	134	114	-20	65	37	-28
some of them (25%)	112	132	20	37	91	54	64	148	84	226	150	-76
half of them (50%)	50	35	-15	48	15	-33	8	19	11	72	112	40
most of them (75%)	32	41	9	65	40	-25	35	29	-6	70	17	-53
almost all (100%)	31	5	-26	95	35	-60	65	4	-61	10	3	-7
Average Percentag of N using	**37.89**	**28.47**	**-9.43**	**58.22**	**29.77**	**-28.46**	**36.36**	**23.01**	**-13.35**	**34.99**	**34.25**	**-0.74**
HWTS use vs Turbidity	ns	ns		ns	ns		$x^2(1)=55.054$ p=0.000	ns		ns		
HWTS use vs Education Interviewee		ns			ns			$x^2=9.997$ p=0.007			$x^2=36.932$ p=0.000	
HWTS use vs Importance treating water	**ns**	$x^2=32.688$ p=0.000		**ns**	$x^2=8.548$ p=0.036		$x^2(3)=6.502$ p=0.090	$x^2=29.782$ p=0.000		$x^2(4)=41.199$ p=0.000	$x^2=196.932$ p=0.000	
HWTS use vs Neighbours	ns	ns		ns	ns		$x^2(4)=88.484$ p=0.000	$x^2=19.371$ p=0.001		$x^2(4)=25.077$ p=0.000	$x^2=46.408$ p=0.000	
HWTS use vs HWTS promotion received		ns			ns			$x^2(1)=5.023$ p=0.025			$x^2(1)=26.055$ p=0.000	
HWTS use vs info through health center		ns			ns			$x^2(1)=3.190$ p=0.075			ns	
HWTS use vs info through CBO		ns			ns			ns			$x^2(1)=3.131$ p=0.077	
HWTS use vs info through Promoter		ns			ns			ns			$x^2(1)=15.174$ p=0.000	
HWTS use vs info through shop owner		ns			ns			ns			ns	
HWTS use vs info through community health worker		ns			ns			ns			ns	
HWTS use vs info through community meeting		ns			ns			ns			ns	
HWTS use vs info through demonstration in town		ns			ns			ns			ns	
HWTS use vs info through TV, radio, newspaper		ns			ns			ns			ns	
HWTS use vs info through other		ns			ns			ns			ns	
N		297			313			309			834	
HWTS use vs found promotion helpful		ns			$x^2(1)=3.712$ p=0.054			ns			ns	
HWTS use vs promotion changed behaviour		$x^2(1)=4.566$ p=0.033			ns			ns			$x^2(1)=7.907$ p=0.005	
HWTS use vs consumption of raw water has no impact	ns	$x^2=22.828$ p=0.000		ns	ns		ns	$x^2=25.403$ p=0.000		ns	$x^2=139.168$ p=0.000	
HWTS use vs consumption of raw water causes diarrhoea	ns			ns			$x^2(1)=5.849$ p=0.016			ns		
HWTS use vs monthly expenditure	ns	ns		ns	ns		$x^2=(6)=21.956$ p=0.001	$x^2=22.409$ p=0.000		$x^2(7)=52.866$ p=0.000	$x^2=75.492$ p=0.000	
HWTS use vs monthly income	$x^2(7)=13.826$ p=0.054	ns		$x^2(7)=25.878$ p=0.001	ns		$x^2(6)=25.255$ p=0.002	$x^2=19.505$ p=0.001		$x^2(7)=64.120$ p=0.000	$x^2=121.930$ p=0.000	
HWTS use vs weekly available	ns	ns		$x^2(6)=25.875$ p=0.000	ns		$x^2(6)=13.749$ p=0.033	$x^2=16.877$ p=0.002		$x^2(6)=32.111$ p=0.000	$x^2=68.050$ p=0.000	
HWTS use vs willingness to pay - water filter	ns	ns		$x^2(7)=14.063$ p=0.050	ns		$x^2(6)=40.463$ p=0.000	$x^2=35.683$ p=0.000		$x^2(7)=32.340$ p=0.000	$x^2=51.705$ p=0.000	
HWTS use vs type of sanitation	ns	$x^2(2)=6.254$ p=0.044		$x^2(7)=7.211$ p=0.027	ns		ns	ns		ns	$x^2(3)=51.531$ p=0.000	
Filter visible and used vs willingness to pay for filter		$x^2(7)=77.382$ p=0.000			$x^2(7)=38.254$ p=0.000			$x^2(6)=22.985$ p=0.001			$x^2(7)=46.728$ p=0.000	
Filter visible and used vs importance of treating water		ns			ns			$x^2(4)=88.776$ p=0.000			ns	
Filter visible and used vs monthly income		$x^2(4)=15.118$ p=0.004			ns			$x^2(3)=10.172$ p=0.017			$x^2(6)=18.733$ p=0.005	
Filter visible and used vs HWTS promotion received		$x^2(1)=5.147$ p=0.023			ns			ns			ns	
Filter visible and used vs info through health center		ns			ns			$x^2(1)=3.145$ p=0.076			ns	
Filter visible and used vs info through CBO		ns			$x^2(1)=4.044$ p=0.044			$x^2(1)=4.598$ p=0.032			ns	

Filter visible and used vs info through Promoter		$x^2(1)=29.404$ p=0.000			$x^2(1)=6.306$ p=0.012			ns			ns	
Filter visible and used vs info through shop owner		ns			ns			ns			ns	
Filter visible and used vs info through community health worker		ns			ns			ns			ns	
Filter visible and used vs info through community meeting		ns			ns			ns			ns	
Filter visible and used vs info through demonstration in town		ns			ns			ns			ns	
Filter visible and used use vs info through TV, radio, newspaper		ns			ns			ns			ns	
Filter visible and used use vs info through other		ns			ns			ns			ns	

Analysis Baseline Bolivia Intervention/Control

A = with promotion, B= without promotion

1= Women group Valle Hermoso, 2= FS Promoter Villa Granado, 3= Health centre Arbieto, 4= entrepreneurs Villa Tunari

Area	1A	1B	2A	2B	3A	3B	4A	All Areas
N	293	158	318	139	317	143	449	1817
HWTS use	98.6%	100.0%	95.9%	97.1%	74.1%	69.9%	93.9%	90.3%
HWTS use frequent	93.9%	88.0%	91.8%	94.2%	52.1%	67.1%	86.6%	81.8%
Boiling frequent use	80.2%	69.0%	80.8%	84.2%	45.1%	54.5%	70.4%	69.1%
Chlorination frequent use	0.3%	0.0%	0.6%	0.7%	0.3%	0.0%	0.0%	0.3%
Filter frequent use	0.7%	0.0%	5.0%	2.2%	0.0%	0.0%	0.2%	1.2%
Filtration with a cloth frequent use	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.2%	0.1%
SODIS frequent use	3.1%	3.8%	0.0%	2.2%	1.6%	1.4%	0.4%	1.5%
Bottled water frequent use	21.2%	28.5%	17.6%	25.2%	7.6%	18.9%	16.9%	17.9%
Know boiling	91.50%	93.00%	81.40%	72.70%	70.30%	82.50%	70.60%	78.9%
Know chlorination	7.2%	10.1%	6.3%	10.1%	4.4%	1.4%	2.2%	5.3%
Know Filtration with cloth	1.0%	3.8%	0.0%	0.7%	1.9%	1.4%	2.0%	1.5%
Know SODIS	28.7%	27.8%	4.7%	13.7%	4.7%	2.8%	4.0%	11.0%
Know Filter	3.1%	3.2%	6.3%	5.8%	0.6%	0.0%	7.1%	4.2%
Know Water Bottles	30.0%	25.3%	21.7%	25.2%	8.5%	21.7%	22.0%	21.4%
Does not know HWTS	5.8%	1.9%	10.7%	18.0%	26.2%	9.1%	4.7%	10.8%
N	293	158	318	139	317	143	449	1817
Water is turbid	3.8%	18.3%	24.8%	13.2%	11.7%	12.6%	2.7%	11.2%
Source Borehole	0.7%	0.0%	0.6%	0.7%	0.0%	0.0%	0.4%	0.4%
Source Shallow well	6.1%	0.0%	7.5%	2.9%	1.6%	1.4%	0.2%	0.3%
Source Piped	13.0%	43.0%	48.7%	86.3%	0.0%	0.0%	96.0%	44.7%
Source River, Open well	0.0%	0.0%	0.0%	0.0%	1.6%	0.7%	0.4%	0.4%
Source Bottled water	16.4%	23.4%	0.3%	0.0%	5.0%	7.0%	1.6%	6.5%
Source Water Trucking	73.0%	84.8%	0.0%	0.0%	96.8%	97.9%	0.2%	43.8%
Source Rain Water	14.7%	49.7%	0.6%	0.0%	1.3%	0.7%	0.0%	7.0%
Source Spring	0.3%	0.0%	0.0%	0.0%	1.3%	4.9%	0.2%	0.7%
Source Water tank	17.4%	5.7%	49.7%	10.1%	0.0%	0.0%	0.9%	13.0%
N	293	158	318	139	317	143	449	
Information source Radio	67.2%	51.3%	66.4%	77.0%	58.7%	58.7%	33.0%	55.8%
Information source Newspaper	23.2%	8.9%	48.7%	54.0%	7.9%	4.2%	11.1%	21.6%
Information source TV	96.2%	94.3%	94.3%	95.7%	81.7%	83.2%	81.5%	88.5%
Information source Community mee	7.2%	10.1%	17.6%	9.4%	0.9%	2.1%	6.0%	7.6%
Information source Neighbours	16.4%	24.1%	10.7%	4.3%	3.2%	6.3%	1.8%	8.4%
Information source Internet	7.5%	5.7%	16.7%	20.1%	0.0%	0.0%	1.8%	6.6%
total N	290	157	314	138	312	143	442	
Sanitation - pit latrine	41.7%	31.2%	1.0%	1.4%	23.4%	10.5%	3.4%	15.5%
Sanitation - flushed toilet	56.6%	64.3%	98.7%	97.8%	3.8%	0.7%	95.5%	63.8%
Sanitation - using bushes	1.4%	4.5%	0.0%	0.7%	72.8%	88.7%	0.0%	20.3%
Sanitation - public toilets	0.3%	0.0%	0.3%	0.0%	0.0%	0.7%	1.1%	0.4%
N	293	158	318	139	317	143	449	
Impact raw water - none	6.1%	0.6%	13.5%	5.0%	27.8%	30.1%	0.9%	11.2%
Impact raw water - Typhoid	3.4%	8.2%	4.4%	2.9%	0.3%	0.7%	7.1%	4.1%
Impact raw water - Diarrhoea	62.5%	93.7%	39.6%	39.6%	34.1%	37.8%	61.9%	52.4%
Impact raw water - Malaria/Dengue	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	1.2%
Impact raw water - Cholera	21.8%	39.2%	5.7%	8.6%	0.6%	0.7%	8.2%	10.8%
Impact raw water - Head ache	3.4%	7.0%	1.3%	0.7%	2.2%	0.0%	6.0%	3.3%
Impact raw water - Worms	40.3%	41.1%	29.9%	34.5%	17.0%	26.6%	13.4%	26.3%
Impact raw water - Diseases	31.4%	10.1%	35.2%	38.1%	28.4%	23.1%	22.7%	27.4%
Impact raw water - Amoeba	19.5%	31.0%	15.7%	25.2%	0.6%	2.1%	7.3%	12.6%
Impact raw water - Skin diseases	8.5%	7.0%	3.8%	7.2%	0.6%	0.7%	0.7%	3.5%
Impact raw water - Stomach pain	54.3%	81.0%	31.4%	48.2%	41.0%	40.6%	26.7%	41.9%
N	293	158	318	139	317	143	449	
Washing hands - never	0.3%	0.0%	0.0%	0.0%	4.1%	2.1%	0.0%	0.9%
Washing hands - before preparing a	51.3%	75.3%	39.3%	38.1%	42.9%	53.8%	10.5%	38.9%
Washing hands - after toilet	61.1%	88.0%	40.9%	42.4%	33.8%	31.5%	18.5%	40.8%
Washing hands - before eating	49.1%	84.8%	44.0%	50.4%	69.7%	78.3%	21.8%	50.6%
Washing hands - after eating	15.7%	46.2%	21.1%	39.6%	16.4%	18.9%	4.7%	18.8%
Washing hands - after changing bab	4.1%	10.1%	2.5%	2.2%	0.3%	0.7%	2.2%	2.8%
Washing hands - whenever they are	68.9%	28.5%	72.3%	74.1%	21.5%	15.4%	77.3%	56.0%
Washing hands - before breastfeedi	4.1%	5.1%	0.9%	0.0%	0.6%	2.1%	2.4%	2.1%
Where do you buy chlorine products - N								1796
at the market	65.5%	68.4%	50.5%	56.1%	86.1%	88.8%	74.8%	70%
at the village shop	33.1%	31.0%	37.8%	33.1%	10.6%	2.8%	21.3%	25%
in a big supermarket	0.7%	0.0%	10.5%	10.8%	0.0%	0.7%	1.1%	3%
in a pharmacy	0	0.6%	0.0%	0.0%	3.2%	7.0%	2.3%	2%
in a household goods shop	0.3%	0.0%	1.3%	0.0%	0.0%	0.0%	0.2%	0%
during a product exhibition	0.3%	0.0%	0.0%	0.0%	0.0%	0.7%	0.2%	0%
What would you purchase for 250 Bs - N	291	156	316	139	310	141	444	1797

Radio	0.3%	0.0%	0.6%	1.4%	2.3%	1.4%	0.9%	1.0%
Chicken	0.0%	0.0%	0.3%	0.0%	2.3%	1.4%	1.4%	0.9%
Mobile phone	0.3%	0.0%	0.3%	5.0%	2.6%	1.4%	2.9%	1.8%
Water filter	4.1%	8.3%	12.0%	7.9%	2.9%	2.1%	4.3%	5.8%
Food	62.2%	50.6%	58.9%	48.2%	69.7%	76.6%	10.4%	49.1%
Cloth	7.2%	8.3%	7.3%	12.2%	8.4%	2.1%	17.3%	10.0%
School fees	6.2%	7.7%	0.6%	1.4%	1.3%	2.1%	19.6%	7.1%
Start own business	1.0%	0.6%	0.3%	0.7%	0.6%	1.4%	1.6%	0.9%
Invest money	17.9%	17.9%	15.8%	21.6%	7.1%	9.2%	17.3%	15.1%
Household goods	0.7%	6.4%	3.8%	1.4%	2.9%	2.1%	24.3%	8.1%
N	289	152	315	139	306	139	444	
Willigness to pay - water filter								
0-40 Bs	28.4%	30.3%	8.6%	14.4%	48.7%	43.2%	11.9%	25%
40-70 Bs	22.8%	23.0%	14.3%	27.3%	17.3%	26.6%	17.1%	20%
70-100 Bs	21.8%	17.1%	17.8%	20.9%	18.0%	17.3%	11.7%	17%
100-130 Bs	10.0%	15.1%	15.2%	8.6%	11.8%	10.8%	39.4%	19%
130-160 Bs	8.3%	5.9%	17.8%	10.1%	3.3%	0.7%	8.8%	9%
160-190 Bs	4.5%	3.3%	12.1%	7.9%	0.3%	0.7%	7.0%	6%
190-220 Bs	3.5%	5.3%	12.7%	7.9%	0.7%	0.7%	2.9%	5%
>220 Bs	0.7%	0.0%	1.6%	2.9%	0.0%	0.0%	1.1%	1%
N	291	158	317	139	306	142	447	
Picture game - value water filter								
Most important	3.1%	6.3%	5.4%	1.4%	2.9%	2.1%	2.7%	
Second important	6.9%	3.2%	3.8%	5.0%	4.6%	2.8%	1.8%	
3rd important	5.5%	5.7%	5.4%	7.2%	4.6%	1.4%	3.6%	
4th important	9.3%	3.8%	3.8%	4.3%	6.5%	7.7%	5.6%	
5th important	8.6%	3.2%	5.0%	5.8%	5.6%	9.2%	6.3%	
6th important	10.3%	14.6%	9.5%	12.2%	9.2%	9.9%	27.1%	
7th important	12.0%	12.7%	10.7%	15.1%	12.1%	9.2%	15.9%	
8th important	15.5%	12.7%	12.9%	18.0%	12.4%	12.0%	6.7%	
9th important	28.9%	38.0%	43.5%	30.9%	42.2%	45.8%	30.4%	
HWTS use vs Turbidity					$x^2(1)=55.054$ p=0.000	$x^2(1)=6.361$ p=0.012		
HWTS use vs Source Spring					$x^2=5.1$ p=0.024			
HWTS use vs Source Piped water							$x^2=7.263$ p=0.007	
HWTS use vs River							$x^2=6.046$ p=0.014	
HWTS use vs Bottled water					$x^2=5.880$ p=0.015			
HWTS use vs Occuption					$x^2=50.242$ p=0.000	$x^2=19.839$ p=0.003	$x^2=24.077$ p=0.001	
HWTS use vs Gender *								
HWTS use vs Importance treating water			$x^2=19.299$ p=0.002	$x^2=35.124$ p=0.000		$x^2=8.187$ p=0.042	$x^2=66.856$ p=0.000	
HWTS use vs drinking untreated water how bad	$x^2=9.648$ p=0.047		$x^2=32.827$ p=0.000		$x^2=38.716$ p=0.000	$x^2=15.404$ p=0.009	$x^2=41.729$ p=0.000	
HWTS use vs HWTS knowledge					$x^2=208.804$ p=0.000	$x^2=26.342$ p=0.000	$x^2=148.122$ p=0.000	
HWTS use vs Neighbours			$x^2=13.796$ p=0.017		$x^2=91.483$ p=0.000	$x^2=25.112$ p=0.000	$x^2=30.752$ p=0.000	
HWTS use vs sanitation			$x^2=11.278$ p=0.010					
HWTS use vs Information source Radio *								
HWTS use vs information source Newspaper							$x^2=11.561$ p=0.001	
HWTS use vs information source TV							$x^2=4.703$ p=0.030	
HWTS use vs information source community meetings *								
HWTS use vs information source neighbours							$x^2=12.407$ p=0.000	
HWTS use vs who buys good over 50BS			$x^2=48.734$ p=0.000		$x^2=17.862$ p=0.001	$x^2=27.499$ p=0.000	$x^2=37.831$ p=0.000	
HWTS use vs impact raw water - Typhoid							$x^2=12.757$ p=0.000	
HWTS use vs impact raw water - Diarrhoea					$x^2=5.849$ p=0.016			
HWTS use vs impact raw water - Diseases						$x^2=6.572$ p=0.010		

HWTS use vs washing hands - never					x^2=4.730 p=0.030			
HWTS use vs washing hands - before preparing a meal			x^2=5.679 p=0.017		x^2=26.381 p=0.000		x^2=9.001 p=0.003	
HWTS use vs washing hands - after toilet						x^2=6.578 p=0.010	x^2=9.875 p=0.002	
HWTS use vs washing hands - before eating							x^2=27.456 p=0.000	
HWTS use vs washing hands - after eating					x^2=13.103 p=0.000	x^2=5.689 p=0.017		
HWTS use vs washing hands - whenever they are dirty			x^2=4.639 p=0.031				x^2=82.894 p=0.000	
HWTS use vs washing hands - before breast feeding						x^2=7.126 p=0.008	x^2=27.188 p=0.000	
HWTS use vs washing hands - after changing baby diapers *								
HWTS use vs What would you buy with 250Bs				x^2=19.076 p=0.014			x^2=33.452 p=0.000	
HWTS use vs monthly expenditure					x^2=17.131 p=0.004		x^2=26.343 p=0.000	
HWTS use vs monthly income	x^2=13.765 p=0.032				x^2=21.205 p=0.001		x^2=38.294 p=0.000	
HWTS use vs weekly available					x^2=13.188 p=0.022		x^2=15.558 p=0.008	
HWTS use vs willingness to pay - water filter			x^2=14.063 p=0.050		x^2=40.463 p=0.000	x^2=16.314 p=0.012	x^2=32.340 p=0.000	
HWTS use vs impact raw water - Malaria/Dengue *								
HWTS use vs impact raw water - Cholera *								
HWTS use vs impact raw water - Head ache *								
HWTS use vs impact raw water - Worms *								
HWTS use vs impact raw water - Amoeba *								
HWTS use vs impact raw water - Skin diseases *								
HWTS use vs impact raw water - Stomach pain *								

* Is not significant in any area

Analysis Final Data Bolivia, Intervention/Control

A = with promotion, B= without promotion

1= Women group Valle Hermoso, 2= FS Promoter Villa Granado, 3= Health centre Arbieto, 4= entrepreneurs Villa Tunari

Area	1A	1B	2A	2B	3A	3B	4A	4B	All Areas
N	303	168	320	140	314	129	319	145	1838
HWTS use (D09_8)	99.0%	99.4%	99.1%	98.6%	92.0%	93.0%	100.0%	100.0%	97.7%
HWTS use frequent (D09_8a)	95.7%	92.9%	97.5%	95.7%	83.4%	73.6%	92.2%	92.4%	91.2%
Boiling frequent use	79.9%	85.7%	89.7%	83.6%	76.4%	63.6%	85.3%	84.8%	82.0%
Chlorination frequent use	2.0%	0.0%	4.1%	2.1%	1.9%	0.8%	7.5%	2.8%	3.1%
Filtration with a cloth frequent use	1.0%	0.6%	1.3%	1.4%	0.0%	0.8%	1.9%	0.0%	0.9%
SODIS frequent use	14.5%	5.4%	2.2%	1.4%	8.9%	1.6%	70.8%	66.9%	22.6%
Bottled water frequent use	39.3%	29.2%	28.4%	26.4%	12.1%	13.2%	21.9%	12.4%	23.9%
Filter frequent use	4.6%	1.2%	6.9%	6.4%	0.3%	0.0%	2.8%	0.7%	3.2%
All that state to use a filter state that they use it frequently									
Filter use in percent	**4.6%**	**1.2%**	**6.9%**	**6.4%**	**0.3%**	**0.0%**	**2.8%**	**0.7%**	**3.2%**
Filter use in numbers	**14**	**2**	**22**	**9**	**1**	**0**	**9**	**1**	**58**
Show system used the most	303	168	320	140	314	129	319	145	1838
Filter visible and used	4.2%	0.6%	5.9%	4.3%	8.3%	0.8%	16.3%	0.0%	6.3%
Filter visible and dry	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	1.3%	0.0%	0.3%
Chlorination product available	0.0%	0.0%	0.0%	0.7%	0.3%	0.8%	2.0%	1.4%	0.6%
Filter with cloth visible	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.3%	0.0%	0.1%
SODIS bottles in the sun	1.1%	1.2%	0.7%	1.4%	11.8%	6.5%	7.6%	3.6%	4.5%
SODIS bottles in the house	1.1%	1.2%	0.0%	0.0%	3.8%	3.2%	1.0%	0.0%	1.3%
System not visible (boiling)	48.8%	72.7%	79.1%	71.4%	56.4%	59.7%	57.5%	86.4%	64.7%
Bottled water visible	29.5%	16.4%	12.1%	21.4%	11.4%	8.1%	14.0%	8.6%	15.7%
No system available	15.4%	7.9%	2.0%	0.7%	7.6%	21.0%	0.0%	0.0%	6.4%
Filter visble and used	**12**	**1**	**18**	**6**	**24**	**1**	**49**	**0**	**111**
Filter visible and dry numbers	**0**	**0**	**1**	**0**	**0**	**0**	**4**	**0**	**5**
Filters visible in HH (dry or used)	**12**	**1**	**19**	**6**	**24**	**1**	**53**	**0**	**116**
HWTS know	100.0%	93.5%	99.1%	95.0%	91.7%	88.4%	100.0%	100.0%	96.6%
Know boiling	94.7%	93.5%	93.8%	93.3%	87.3%	78.3%	90.6%	93.1%	91.1%
Know chlorination	23.4%	14.3%	39.1%	29.3%	13.4%	3.9%	18.5%	15.9%	21.2%
Know Filtration with cloth	10.6%	4.2%	12.5%	8.6%	1.9%	2.3%	4.1%	4.1%	6.5%
Know SODIS	42.6%	21.4%	25.6%	9.3%	16.6%	9.3%	29.2%	15.9%	23.9%
Know Filter	21.1%	5.4%	32.5%	17.9%	8.9%	0.8%	4.1%	6.2%	13.8%
Know Bottled water	46.5%	38.7%	35.0%	30.7%	16.6%	15.5%	39.8%	29.7%	32.8%
Does not know HWTS	0.0%	6.5%	0.9%	5.7%	8.3%	11.6%	0.3%	2.1%	3.6%
Water is turbid	2.6%	4.2%	35.6%	10.0%	13.1%	13.2%	19.1%	34.5%	17.00%
Source Borehole	2.0%	1.8%	18.1%	22.1%	1.9%	0.0%	2.5%	0.0%	6.1%
Source Shallow well	1.3%	1.8%	25.9%	1.4%	1.3%	0.0%	1.6%	1.4%	5.6%
Source Piped	41.6%	31.5%	60.9%	80.0%	2.9%	0.0%	96.2%	98.6%	51.4%
Source River, Open well	0.7%	0.0%	0.0%	0.7%	0.6%	2.3%	1.6%	2.8%	0.9%
Source Bottled water	9.6%	10.7%	7.5%	5.0%	23.6%	13.2%	2.8%	1.4%	9.8%
Source Water Trucking	65.3%	83.9%	0.0%	0.0%	92.7%	90.7%	0.6%	0.7%	40.8%
Source Rain Water	0.7%	0.0%	0.3%	0.0%	9.2%	18.6%	1.3%	1.4%	3.4%
Source Spring	0.7%	0.0%	0.6%	0.0%	1.3%	1.6%	2.2%	2.8%	1.1%
Source Water tank	3.3%	1.8%	5.3%	0.0%	0.3%	0.0%	0.3%	0.0%	1.7%
Information Health Center	1.0%	0.0%	1.6%	1.4%	10.5%	1.6%	2.5%	0.7%	
Information CBO	51.5%	4.8%	5.6%	0.0%	0.6%	0.8%	2.5%	0.0%	
Information Promoter	16.8%	0.0%	63.1%	2.1%	1.0%	0.0%	98.4%	11.0%	
Information Shop Owner	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.3%	0.0%	
Information Health Agent	1.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.6%	0.0%	
Info Demo in community	0.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.6%	0.0%	
Info TV radio newspaper	0.3%	0.0%	5.3%	4.3%	0.0%	0.8%	0.0%	0.0%	
Info through other sources	1.7%	0.6%	0.6%	0.0%	3.8%	0.0%	0.0%	0.0%	
Received promotion	69.6%	4.8%	67.5%	6.4%	15.6%	3.1%	100.0%	11.0%	
N	212	8	216	9	49	4	219	17	
Did find promotion helpful	83.5%	87.5%	78.7%	100.0%	89.9%	75.0%	87.8%	100.0%	
Promotion changed behaviour	69.3%	75.0%	53.2%	88.9%	77.6%	50.0%	85.0%	100.0%	
N	303	168	320	140	314	129	319	145	1838
Sanitation - pit latrine	93.7%	88.7%	4.4%		59.9%	36.4%	13.2%	6.9%	40.00%
Sanitation - flushed toilet	4.3%	10.7%	95.6%	98.6%	1.3%	0.8%	86.2%	92.4%	48.40%
Sanitation - using bushes	2.0%	0.6%	0.0%	0.0%	38.2%	62.0%	0.3%	0.0%	11.30%
Sanitation - public toilets	0.0%	0.0%	0.0%	0.0%	0.6%	0.8%	0.3%	0.7%	0.30%
Impact raw water - None	5.3%	10.7%	0.6%	5.0%	18.5%	23.3%	2.2%	4.8%	7.90%
Impact raw water - Typhoid	13.9%	22.6%	6.9%	10.7%	1.0%	1.6%	40.1%	40.0%	16.80%
Impact raw water - Diarrhoea	67.3%	64.9%	57.2%	52.1%	61.8%	65.1%	75.2%	68.3%	64.50%
Impact raw water - Malaria/Dengue	0.3%	0.6%	3.8%	4.3%	0.3%	0.0%	14.7%	19.3%	5.20%
Impact raw water - Cholera	5.0%	14.3%	37.2%	35.0%	10.8%	3.1%	55.5%	59.3%	27.60%
Impact raw water - Head ache	11.9%	4.8%	9.4%	3.6%	4.8%	0.0%	32.3%	30.3%	13.10%
Impact raw water - Worms	38.6%	36.3%	36.3%	41.4%	17.8%	18.6%	25.1%	27.6%	30.00%
Impact raw water - Diseases	24.1%	17.9%	27.8%	27.9%	8.3%	6.2%	10.7%	14.5%	17.40%
Impact raw water - Amoeba	10.9%	10.1%	16.6%	19.3%	1.0%	0.0%	8.2%	6.2%	9.10%
Impact raw water - Skin diseases	2.0%	2.4%	5.0%	3.6%	0.6%	0.0%	1.3%	5.5%	2.40%
Impact raw water - Stomach pain	32.0%	29.2%	38.8%	36.4%	34.4%	37.2%	22.9%	15.9%	31.20%
Washing hands - never	1.0%	0.0%	0.9%	0.7%	9.6%	2.3%	1.9%	1.4%	2.6%

Washing hands - before preparing a meal	49.2%	41.7%	51.9%	56.4%	49.7%	29.5%	78.7%	69.0%	54.9%
Washing hands - after toilet	62.4%	58.9%	85.9%	84.3%	39.5%	38.0%	71.5%	77.2%	65.0%
Washing hands - before eating	78.2%	73.8%	76.6%	92.1%	47.1%	56.6%	73.0%	83.4%	71.3%
Washing hands - after eating	30.4%	28.0%	33.4%	39.3%	33.4%	30.2%	49.2%	65.5%	37.9%
Washing hands - after changing baby diapers	7.9%	4.2%	10.0%	5.0%	9.2%	3.9%	26.6%	30.3%	12.7%
Washing hands - whenever they are dirty	45.2%	35.7%	38.8%	40.0%	22.6%	24.8%	33.2%	39.3%	35.0%
Washing hands - before breastfeeding	1.0%	1.2%	5.3%	4.3%	0.6%	0.0%	14.4%	23.4%	6.0%
N									
Where did you buy Chlorine:									
Market	49.8%	44.6%	37.8%	37.1%	43.6%	24.0%	76.2%	73.8%	49.90%
NGO	0.3%	0.6%	0.0%	0.0%	1.0%	0.8%	2.2%	1.4%	0.80%
Pharmacy	1.3%	2.4%	2.8%	5.0%	0.3%	0.8%	0.3%	2.1%	1.60%
Household Ware Shop									
Water Kiosk	2.3%	4.2%	2.5%	0.7%	1.3%	2.3%	0.6%	0.7%	1.80%
CBO door to door	1.3%	0.0%	2.5%	0.7%	0.0%	0.0%	0.6%	0.7%	0.90%
Supermarket	0.7%	0.6%	2.5%	9.3%	0.0%	0.0%	0.0%	0.0%	1.30%
Small shop	2.0%	1.2%	2.5%	6.4%	0.0%	0.0%	0.0%	1.4%	1.50%
MFI	0.0%	0.6%	0.9%	0.0%	0.0%	0.0%	0.3%	0.0%	0.30%
Did not buy any	44.6%	49.4%	58.1%	54.3%	54.8%	73.6%	23.2%	24.8%	46.60%
N									
Where did you buy your filter:									
Does not buy a filter	93.4%	98.8%	94.4%	93.6%	84.7%	97.7%	83.1%	99.3%	91.60%
Market	1.0%	0.0%	1.9%	0.7%	14.3%	1.6%	13.8%	0.7%	5.50%
NGO	1.0%	0.6%	1.6%	1.4%	0.3%	0.0%	5.6%	0.0%	1.60%
Pharmacy	0.3%	0.0%	0.0%	0.0%	0.3%	0.0%	0.3%	0.0%	0.20%
Household Ware Shop									
Water Kiosk	0.3%	0.0%	0.6%	0.0%	0.6%	0.8%	1.9%	0.7%	0.70%
CBO door to door	4.3%	0.6%	0.3%	0.7%	0.0%	1.6%	0.6%	0.7%	1.10%
Supermarket	0.7%	0.0%	0.0%	1.4%	0.3%	0.0%	0.0%	0.0%	0.30%
Small shop	0.0%	0.0%	0.3%	0.0%	0.0%	0.8%	0.0%	0.0%	0.10%
MFI	0.0%	0.0%	0.6%	0.0%	0.0%	0.0%	0.3%	0.7%	0.20%
I do have a filter									
N									
Where did you buy your filter:									
Did not buy a filter	283	166	302	131	266	126	265	144	1638
Market	3	0	6	1	45	2	44	1	102
NGO	3	1	5	2	1	0	18	0	30
Pharmacy	1	0	0	0	1	0	1	0	3
Water Kiosk	1	0	2	0	2	1	6	1	13
CBO door to door	13	1	1	1	0	2	2	1	21
Supermarket	2	0	0	2	1	0	0	0	5
Small shop	0	0	1	0	0	1	0	0	2
MFI	0	0	2	0	0	0	1	1	4
Total calcutated	**23**	**2**	**17**	**6**	**50**	**6**	**72**	**4**	**180**
Filters visible in HH (dry or used)	**12**	**1**	**19**	**6**	**24**	**1**	**53**	**0**	**116**
Filter use in numbers	**14**	**2**	**22**	**9**	**1**	**0**	**9**	**1**	**58**
purchase for 250Bs - Radio	0.7%	0.6%	0.6%	0.0%	15.6%	3.9%	8.5%	8.3%	5.3%
purchase for 250Bs - Chicken	1.3%	0.6%	0.3%	0.0%	8.3%	10.1%	10.7%	26.2%	6.4%
purchase for 250Bs - mobile phone	2.6%	3.0%	3.4%	2.1%	5.1%	7.0%	4.1%	6.2%	1.0%
purchase for 250Bs - Water filter	9.2%	18.5%	4.4%	0.0%	6.4%	1.6%	27.0%	17.9%	11.3%
purchase for 250Bs - Food	32.0%	29.8%	53.1%	37.9%	33.1%	36.4%	9.7%	3.4%	30.3%
purchase for 250Bs - Cloth	11.9%	11.9%	9.7%	15.0%	13.4%	18.6%	8.8%	5.5%	11.4%
purchase for 250Bs - School fees	4.6%	4.2%	0.3%	2.9%	5.7%	7.8%	1.6%	4.1%	3.5%
purchase for 250Bs - Start own business	4.0%	3.6%	0.3%	0.7%	2.9%	1.6%	3.8%	2.8%	2.6%
purchase for 250Bs - invest money	15.8%	10.7%	6.3%	10.7%	3.2%	7.8%	21.0%	18.6%	11.7%
purchase for 250Bs - household goods	17.8%	17.3%	21.6%	30.7%	6.4%	5.4%	5.0%	6.9%	13.5%
Willigness to pay - water filter									
0-40 Bs	57.1%	50.0%	36.3%	31.4%	36.9%	48.1%	17.2%	23.4%	37.2%
40-70 Bs	13.2%	13.1%	16.3%	10.7%	28.3%	17.1%	22.6%	11.0%	17.8%
70-100 Bs	8.9%	16.1%	9.4%	7.1%	16.9%	14.7%	31.3%	30.3%	16.9%
100-130 Bs	5.6%	8.3%	18.4%	21.4%	10.8%	14.7%	13.5%	21.4%	13.4%
130-160 Bs	3.3%	3.0%	9.7%	7.1%	3.5%	4.7%	3.4%	4.8%	5.0%
160-190 Bs	2.3%	0.6%	4.4%	6.4%	3.2%	0.8%	5.3%	3.4%	3.5%
190-220 Bs	3.3%	0.6%	1.9%	2.1%	0.3%	0.0%	5.0%	2.8%	2.2%
>220 Bs	6.3%	8.3%	3.8%	13.6%	0.0%	0.0%	1.6%	2.8%	4.0%
Picture game - value water filter									
Most important	30.0%	21.4%	10.9%	5.0%	14.0%	15.5%	12.2%	9.7%	15.60%
Second important	9.6%	10.1%	10.3%	9.3%	11.1%	4.7%	9.1%	13.1%	9.80%
3rd important	10.6%	4.8%	9.4%	14.3%	11.8%	8.5%	13.2%	11.7%	10.70%
4th important	5.9%	7.7%	10.9%	13.6%	14.3%	7.8%	24.8%	27.6%	14.10%
5th important	8.3%	2.4%	10.9%	14.3%	15.6%	15.5%	16.9%	20.0%	12.80%
6th important	6.6%	7.1%	11.6%	16.4%	15.0%	14.7%	11.9%	7.6%	11.30%
7th important	6.6%	13.7%	12.5%	12.9%	6.1%	9.3%	3.1%	2.8%	7.90%
8th important	8.6%	13.7%	14.1%	8.6%	6.4%	4.7%	1.3%	1.4%	7.50%

9th important	13.9%	19.0%	9.4%	5.7%	5.7%	19.4%	7.5%	6.2%	10.20%
N	297	167	313	130	309	128	310	144	1798
Education level interviewee									
Primary	37.0%	42.5%	8.3%	2.3%	62.8%	63.3%	42.3%	43.1%	37.80%
Secondary	47.8%	48.5%	36.1%	33.8%	33.0%	33.6%	43.9%	40.3%	40.00%
College	14.5%	9.0%	55.6%	63.8%	4.2%	3.1%	13.9%	16.7%	22.20%
HWTS use vs Turbidity						$x^2(1)=8.266$ p=0.004			
HWTS use vs Source Shallow well					$x^2=9.771$ p=0.002				
HWTS use vs Source Spring *									
HWTS use vs Source borehole *									
HWTS use vs Source Piped water									$x^2=24.735$ p=0.000
HWTS use vs River *									
HWTS use vs Water truck									$x^2=41.244$ p=0.000
HWTS use vs Bottled water					$x^2=5.773$ p=0.016				
HWTS use vs Rain water						$x^2=8.723$ p=0.003			$x^2=22.500$ p=0.000
HWTS use vs water tank			$x^2=4.727$ p=0.030						
HWTS use vs Education interviewee					$x^2=9.997$ p=0.007				$x^2=36.932$ p=0.000
HWTS use vs Gender *									ns
HWTS use vs Importance treating water	$x^2=32.688$ p=0.000	$x^2=27.162$ p=0.000	$x^2=8.548$ p=0.036	$x^2=16.480$ p=0.000	$x^2=29.782$ p=0.000	$x^2=33.891$ p=0.000			$x^2=196.932$ p=0.000
HWTS use vs drinking untreated water how bad		$x^2=17.772$ p=0.001		$x^2=7.834$ p=0.050	$x^2=16.604$ p=0.005	$x^2=32.001$ p=0.000			$x^2=91.435$ p=0.000
HWTS use vs Neighbours					$x^2=19.371$ p=0.001	$x^2=10.455$ p=0.015			$x^2=46.408$ p=0.000
HWTS use vs HWTS promotion received	ns	ns	ns	ns	$x^2(1)=5.023$ p=0.025	ns	ns	ns	$x^2(1)=26.055$ p=0.000
HWTS use vs info through health center	ns	ns	ns	ns	$x^2(1)=3.190$ p=0.075	ns	ns	ns	ns
HWTS use vs info through CBO	ns	ns	ns	ns	ns	ns	ns	ns	$x^2(1)=3.131$ p=0.077
HWTS use vs info through Promoter	ns	ns	ns	ns	ns	ns	ns	ns	$x^2(1)=15.174$ p=0.000
HWTS use vs info through shop owner	ns	ns	ns	ns	ns	ns	ns	ns	ns
HWTS use vs info through community health worker	ns	ns	ns	ns	ns	ns	ns	ns	ns
HWTS use vs info through community meeting	ns	ns	ns	ns	ns	ns	ns	ns	ns
HWTS use vs info through demonstration in town	ns	ns	ns	ns	ns	ns	ns	ns	ns
HWTS use vs info through TV, radio, newspaper	ns	ns	ns	ns	ns	ns	ns	ns	ns
HWTS use vs info through other	ns	ns	ns	ns	ns	ns	ns	ns	ns
N	297	167	313	130	309	128	310	144	834
HWTS use vs found promotion helpful			$x^2(1)=3.712$ p=0.054						ns
HWTS use vs promotion changed behaviour	$x^2(1)=4.566$ p=0.033								$x^2(1)=7.907$ p=0.005
HWTS use vs who buys good over 50BS					$x^2=17.880$ p=0.001	$x^2=11.126$ p=0.011			$x^2=36.525$ p=0.000
HWTS use vs impact raw water - None	$x^2=22.828$ p=0.000	$x^2=8.383$ p=0.004		$x^2=8.650$ p=0.003	$x^2=25.403$ p=0.000	$x^2=10.216$ p=0.001			$x^2=139.168$ p=0.000
HWTS use vs monthly expenditure					$x^2=22.409$ p=0.000	$x^2=13.438$ p=0.009			$x^2=75.492$ p=0.000
HWTS use vs monthly income					$x^2=19.505$ p=0.001	$x^2=18.815$ p=0.000			$x^2=121.930$ p=0.000
HWTS use vs weekly available					$x^2=16.877$ p=0.002	$x^2=14.326$ p=0.006			$x^2=68.050$ p=0.000
HWTS use vs willingness to pay - water filter					$x^2=35.683$ p=0.000				$x^2=51.705$ p=0.000
HWTS use vs type of sanitation	$x^2(2)=6.254$ p=0.044								$x^2(3)=51.531$ p=0.000

* Is not significant in any area

Analysis Baseline Kenya, Intervention/Control

A = with promotion, B= without promotion

1= Munyu Water Project, 2= Community health workers, 3= CBO's, 4= KWAHO Promoter

Area	1A	1B	2A	2B	3A	3B	4A	4B	All Areas
N	**301**	**153**	**305**	**155**	**310**	**169**	**308**	**165**	**1884**
in percent									
HWTS use	64.4	49	60.7	60	58.7	62	60.6	76.4	61.4
HWTS use frequent	40.2	25.5	35.4	32.3	25.5	37.3	35.1	49.1	34.6
Boiling frequent use	11.3	5.2	3	1.3	4.5	4.1	15.6	17.6	8.1
Chlorination frequent use	29.9	17.6	31.1	29.7	20.3	32	18.5	32.1	25.1
Filter frequent use	0.5	0	1.3	0.6	1	0	0	0	0.5
Filter use in percent	**0.7**	**0**	**1.3**	**0.6**	**1**	**0**	**0**	**0**	**0.5**
Filter use in numbers	**2**	**0**	**4**	**1**	**3**	**0**	**0**	**0**	**10**
*PUR, SODIS, Filtration with a cloth are not used in project area									
N	301	153	305	155	310	169	308	165	1884
in percent									
Know boiling	72.9	60.8	61	70.3	71.3	60.8	76.6	80	69.6
Know chlorination	84	79.1	88.5	93.5	77.9	73.1	79.5	84.2	82.4
Know PUR	17.6	27.5	17	17.4	20.2	28.1	12.5	20	19.1
Know Filtration with Cloth	9.2	2.6	5.2	9	2.5	4.7	1.9	0.6	4.5
Know SODIS	1	0	0	0	0	0.6	0.3	0	0.3
Know Filter	4.9	2.6	1	1.9	4.4	8.8	3.8	1.8	3.7
Does not know HWTS	4.6	15.7	8.5	3.9	18.3	18.1	11.5	8.5	11.1
N	306	153	305	155	317	171	312	165	1884
in percent									
Water is turbid	78.8	83	62.3	89.7	96.8	62.4	27.2	46.7	51.8
Source Borehole	12.4	1.3	18	1.3	0.9	1.8	0	0	5.5
Source Shallow well	17.3	5.6	37.4	0.6	0.6	14.6	3.5	0.6	11.5
Source Piped	54.6	72.5	1.6	1.3	0.9	0.6	0	10.3	16.5
Source River, Open well	15.7	17.6	55.7	96.8	96.8	18.7	97.8	97	63.6
Source Water Vendor	16	15.7	2	0	0.6	0	0.3	0.6	4.4
Source Water Trucking	1.6	2	0	0	0	0	0.3	0	0.5
Source Rain Water	9.2	17	8.2	9.7	19.9	18.7	14.1	7.3	13
Source Pond	6.2	13.7	0.7	0	0	75.4	5.1	1.2	10
N	306	153	305	155	317	171	312	165	1884.00
in percent									
Information source Radio	94.1	97.4	92.8	97.4	83	81.9	75.3	70.3	86.3
Information source Newspaper	8.2	4.6	4.9	6.5	3.5	1.8	1.6	0	4
Information source TV	28.1	17.6	16.7	27.7	3.5	2.9	1.9	2.4	12.4
Information source Com-Meeting	18.3	27.5	19.7	23.9	35	38.6	43.3	42.4	30.6
Information source Neighbours	13.4	16.3	23.6	21.9	30.6	36.3	42	46.1	28.6
N	302	150	305	155	316	171	312	164	1875.00
in percent									
Own VIP latrine	32.5	27.3	31.1	12.3	38.2	46.2	34	34.8	29.9
Shared VIP latrine	25.8	22.7	10.5	9.7	17.7	22.8	20.8	20.1	18.8
Bushes	0.3	0.7	0	0	0.9	0.6	3.8	3.7	1.3
Own PIT latrine	29.1	35.3	35.4	40	32	19.3	31.1	28	31.4
Shared PIT latrine	12.3	14	41	31.1	11.1	11.1	10.3	13.4	18.7
N	306	153	305	155	317	171	312	165	1884.00
in percent									
raw water has no impact	6.2	6.5	3.6	5.2	7.3	2.9	8.7	6.7	6.1
raw water causes Typhoid fever	87.9	89.5	86.2	81.9	58.4	77.2	68.3	58.2	75.5
raw water causes Diarrhoea	40.8	46.4	49.5	41.9	53.6	57.3	46.5	62.4	49.3
raw water causes Malaria	9.8	16.3	12.5	23.2	11.7	8.8	7.7	10.9	11.8
raw water causes Cholera	54.6	55.6	52.8	45.2	33.4	28.7	31.7	37.6	42.4
raw water causes Head ache	13.1	11.1	9.8	15.5	0.6	0.6	0	1.2	6.2
raw water causes Worms	0.3	1.3	0.7	0	6.3	3.5	1.6	2.4	2.1
raw water causes germs	1	0	2.3	5.2	27.4	24.6	9.3	5.5	9.8
raw water causes Amoeba	1.3	5.2	5.6	5.8	33.4	48.5	46.8	52.7	24.4
raw water causes Skin diseases	0	0.7	0.3	0	0.9	1.2	0	0.6	0.4
N	306	153	305	155	317	171	312	165	1884.00
in percent									
never wash hands	0	0	0	0	0.6	2.3	0	1.2	0.4
wash hands before cooking	43.1	47.1	36.1	34.8	8.2	25.1	16.3	21.8	27.8
wash hands after toilet	96.1	95.4	96.7	96.8	54.3	56.7	63.1	63	77.2
wash hands before eating	79.1	83.7	90.8	87.1	58.7	62.6	64.4	77.6	74.5
wash hands after eating	42.2	40.5	43.6	34.2	27.1	33.3	33	24.2	35.2
wash hands whenever dirty	0	0	0	0	44.8	35.1	34.9	25.5	18.7
N	300	150	305	154	313	171	312	165	1870.00
Where do you buy Chlorine Products	in percent								
at the market	17.3	16	16.1	7.8	80.8	78.4	78.8	80.6	48.3
small kiosk	3	0	1	2.6	4.8	1.8	2.9	1.2	2.4
village shop	51.3	58.7	50.5	50.6	8	3.5	4.8	3	28.1
all purpose or hardware shop	18.3	12.7	15.4	17.5	0	0	0	0	7.9
big supermarket	9.3	12.7	11.1	17.5	1.9	1.2	0.3	1.8	6.4
chemist, pharmacy	0.7	0	5.9	3.9	4.5	15.2	13	13.3	6.9
N	306	153	305	155	317	171	312	165	1884.00
Prefer to buy HWTS from:	in percent								
Market	19	12.4	10.8	15.5	53.9	39.2	46.8	55.8	32.4
NGO	4.9	2	1.6	1.9	3.2	17.5	3.8	0	4.1
Pharmacy	24.8	27.5	40	29	24	22.8	26.9	18.8	27.3
Household Ware Shop	4.9	11.8	11.5	9	0	0.6	1	0.6	4.6
Water Kiosk	5.6	7.2	12.5	15.5	0.9	2.3	1.3	3	5.6
CBO door to door	15	16.3	17.7	24.5	6.6	7.6	2.9	1.8	11.1
Supermarket	16.3	18.3	6.6	5.8	1.6	4.1	1.6	0.6	6.6
Small shop	22.5	23.5	17.7	11	18.6	31	41.3	27.7	24.5
MFI	0	0	0	0	0.3	0	0.6	1.8	0.3
Other	0.7	0	0	0.6	1.9	1.8	1	0.6	0.8
N									1834

What would you purchase with 2000 KSH	in percent	only one answer possible!							
Radio	5.6	6.3	3.7	9.5	3.2	0.6	1.9	1.2	3.8
Chicken	12.6	16.2	6.7	5.4	7.3	1.8	3.8	3.6	7.1
Mobile Phone	10.2	5.6	9.8	7.5	2.2	0.6	1.3	1.2	5.0
Water Filter	12.3	17.6	20.5	19	2.2	2.4	2.2	0.6	9.2
Goat	20.4	28.2	15.5	8.8	20.3	22.9	21.2	18.8	19.5
Food	31.9	21.8	27.9	36.7	18	25.9	23.1	27.3	26.0
Clothes	6.3	4.2	9.4	9.5	1.9	1.2	1	0.6	4.3
School Fees	0.7	0	4.4	2.7	19.3	11.8	19.2	18.2	10.4
Start own business	0	0	0	0	2.2	2.4	1.3	1.8	1
Invest the money	0	0	0.3	0	4.1	4.1	6.4	6.1	2.8
Buy household goods	0	0	1.7	0.7	19.3	26.5	18.6	20.6	11.1
Willingness to pay for filters	306	153	305	155	316	170	312	165	
0-500 ksh	41.9	50.3	41.4	52.9	63.8	52.4	55.4	52.7	51.2
500-1000 ksh	31.3	21.4	23.4	28.4	23.3	35.9	31.4	33.3	28.3
1000-1500 ksh	15.5	13.1	13.2	6.5	10.4	6.5	7.1	8.5	10.4
1500-2000 ksh	6.9	13.1	10.5	6.5	1.3	4.1	5.1	4.2	6.2
2000-2500 ksh	1	2.1	8.2	1.9	0.6	1.2	1	1.2	2.2
2500-3000 ksh	2.7	0	2.3	2.6	0.3	0	0	0	1.2
3000-3500 ksh	0.7	0	1	0.6	0.3	0	0	0	0.4
> 3500 ksh	0	0	0	0.6	0.6	0	0	0	0.2
HWTS use vs Turbidity		$x^2(1)=4.175$ p=0.041				$x^2(1)=12.697$ p=0.000		$x^2(1)=9.071$ p=0.003	$x^2(1)=5.805$ p=0.016
HWTS use vs Source Rainwater					$x^2(1)=14.276$ p=0.000		$x^2(1)=9.678$ p=0.002		$x^2(1)=13.040$ p=0.000
HWTS use vs Source Shallow well						$x^2(1)=4.031$ p=0.045			
HWTS use vs River, Open well						$x^2(1)=12.739$ p=0.000			
HWTS use vs Pond							$x^2(1)=5.119$ p=0.024		
HWTS use vs Occupation							$x^2(7)=18.835$ p=0.009		$x^2(7)=14.22$ p=0.047
HWTS use vs Gender				$x^2(1)=15.785$ p=0.000					$x^2(1)=10.08$ p=0.002
HWTS use vs Knowledge on HWTS	$x^2(1)=26.516$ p=0.000	$x^2(1)=27.370$ p=0.000	$x^2(1)=43.819$ p=0.000	$x^2(1)=9.362$ p=0.002	$x^2(1)=93.700$ p=0.000	$x^2(1)=61.784$ p=0.000	$x^2(1)=62.532$ p=0.000	$x^2(1)=40.611$ p=0.000	$x^2(1)=361.721$ p=0.000
HWTS use vs Importance of treating drinking water	$x^2(4)=72.134$ p=0.000	$x^2(4)=9.404$ p=0.052	$x^2(2)=33.200$ p=0.000	$x^2(3)=17.905$ p=0.000	$x^2(4)=57.361$ p=0.000	$x^2(4)=46.830$ p=0.000	$x^2(4)=55.488$ p=0.000	$x^2(4)=27.201$ p=0.000	$x^2(4)=237.554$ p=0.000
HWTS use vs drinking raw water is good for health	$x^2(6)=30.419$ p=0.000	$x^2(6)=16.019$ p=0.014	$x^2(6)=26.747$ p=0.000	$x^2(4)=21.333$ p=0.000	$x^2(6)=58.547$ p=0.000	$x^2(6)=31.987$ p=0.000	$x^2(5)=81.519$ p=0.000	$x^2(5)=32.067$ p=0.000	$x^2(6)=232.371$ p=0.000
HWTS use vs how many people in the area use HWTS	$x^2(3)=55.374$ p=0.000	$x^2(3)=29.838$ p=0.000	$x^2(4)=29.277$ p=0.000	$x^2(4)=39.137$ p=0.000	$x^2(3)=14.504$ p=0.002	$x^2(4)=12.866$ p=0.012	$x^2(3)=22.943$ p=0.000	$x^2(4)=11.810$ p=0.019	$x^2(4)=184.016$ p=0.000
HWTS use vs info source radio					$x^2(1)=14.823$ p=0.022		$x^2(1)=5.395$ p=0.020		$x^2(1)=4.785$ p=0.029
HWTS use vs info source TV	$x^2(1)=6.546$ p=0.011								$x^2(1)=7.484$ p=0.006
HWTS use vs info source ComMeet			$x^2(1)=9.781$ p=0.001				$x^2(1)=4.214$ p=0.040		
HWTS use vs info source neighbours			$x^2(1)=6.629$ p=0.010		$x^2(1)=11.321$ p=0.001		$x^2(1)=3.847$ p=0.050		
HWTS use vs monthly expenditure	$x^2(6)=18.155$ p=0.006				$x^2(6)=14.823$ p=0.022		$x^2(6)=18.784$ p=0.005		$x^2(6)=34.138$ p=0.000
HWTS use vs monthly income	$x^2(6)=12.433$ p=0.053	$x^2(6)=10.818$ p=0.055	$x^2(6)=15.930$ p=0.014	$x^2(6)=12.618$ p=0.050	$x^2(6)=20.522$ p=0.002	$x^2(6)=16.076$ p=0.013	$x^2(6)=20.649$ p=0.002	ns	$x^2(6)=31.833$ p=0.000
HWTS use vs money available per week				$x^2(5)=29.474$ p=0.000	$x^2(5)=23.641$ p=0.000		$x^2(5)=22.425$ p=0.000	$x^2(5)=16.292$ p=0.006	$x^2(5)=46.542$ p=0.000
Frequent use chlorination vs willingness to pay chlorine							$x^2(3)=31.222$ p=0.000	$x^2(2)=31.452$ p=0.001	$x^2(7)=45.778$ p=0.000
Frequent use filter vs willingness to pay for filter	$x^2(6)=19.260$ p=0.004				$x^2(7)=114.401$ p=0.000				$x^2(7)=47.186$ p=0.000
HWTS use vs handwashing index	$x^2(4)=34.245$ p=0.000	$x^2(4)=14.985$ p=0.005	$x^2(3)=13.213$ p=0.004		$x^2(5)=22.443$ p=0.000				$x^2(5)=44.094$ p=0.000
HWTS use vs type of sanitation	mostly ns								ns

Analysis Final Data Kenya, Intervention/Control

A = with promotion, B= without promotion

1= Munyu Water Project, 2= Community health workers, 3= CBO's, 4= KWAHO Promoter

Area	1A	1B	2A	2B	3A	3B	4A	4B	All Areas
N	**310**	**154**	**303**	**151**	**299**	**149**	**299**	**145**	
in percent									
HWTS use (D15_7)	85.9	85.2	69.3	75.2	81.1	75.3	87.5	94.7	81
HWTS use frequent (D20_all)	62.9	64.9	51.8	51.7	69.9	70.5	73.6	91.7	65
Boiling frequent use	19	18.7	10.9	9.8	9.6	4.7	25.9	27.2	16.1
Chlorination frequent use	37.3	41.9	31	39.9	60.3	60.4	53.1	79.5	48.7
Filter frequent use	5.5	5.2	12.2	4.6	2.3	3.3	1.3	0.7	4.7
Filter use in percent	**6.1**	**5.8**	**13.5**	**6.5**	**2.3**	**3.3**	**1.6**	**2.6**	**5.5**
Filter use in numbers	**19**	**9**	**41**	**10**	**7**	**5**	**5**	**4**	**100**
*PUR, SODIS, Filtration with a cloth are hardly used in project area									
N	311	155	303	153	302	150	305	151	1830
in percent									
Know boiling	77.5	85.8	91.7	88.2	90.1	91.3	88.2	90.7	87.5
Know chlorination	81.7	90.3	88.4	94.8	92.1	90.7	85.2	95.4	88.8
Know PUR	32.5	51.6	23.1	30.7	48.7	53.3	32.1	49.7	38.1
Know Filtration with Cloth	16.4	20.6	10.6	16.3	6.3	6.0	4.9	8.3	10.7
Know SODIS	18.6	14.2	27.7	15.0	35.8	16.7	40.0	55.0	28.7
Know Filter	22.8	26.5	49.5	32.7	39.1	38.0	31.8	51.7	36.2
Does not know HWTS	4.8	3.2	3.0	1.3	3.3	2.7	2.3	0.7	2.9
N	311	155	303	153	302	150	305	151	1830
in percent									
Water is turbid									
Source Borehole	12.5	3.9	20.1	8.5	0.3	63.3	12.8	0.0	13.9
Source Shallow well	8.7	9.0	30.4	2.0	0.3	9.3	4.9	0.7	9.1
Source Piped	68.5	88.4	0.3	2.6	1.3	4.7	6.2	21.9	22.8
Source River, Open well	12.5	21.3	57.8	87.6	98.0	22.0	82.3	96.7	60.5
Source Water Vendor	14.5	4.5	0.7	2.0	0.3	1.3	0.0	0.0	3.3
Source Water Trucking	0.6	1.3	0.7	0.0	0.7	0.0	0.0	0.0	0.4
Source Rain Water	39.2	56.8	35.6	37.3	5.3	14.0	6.2	6.6	24.1
Source Pond	7.7	5.2	7.9	0.0	1.0	32.7	2.0	1.3	6.3
N	311	155	303	153	302	150	305	151	1830
in percent									
Information Health Center	8.7	15.5	15.5	19.6	6.6	6.7	8.2	1.3	10.1
Information CBO	17.0	30.3	18.8	15.0	65.6	49.3	6.2	11.3	26.7
Information Promoter	24.4	21.3	20.5	7.8	30.8	10.7	83.0	87.4	37.0
Information Shop Owner	4.2	14.2	5.3	2.6	1.0	0.7	0.3	0.7	3.3
Information Com. Health Worker	14.5	21.3	33.3	31.4	0.3	0.0	0.7	2.0	12.7
Information Barazza	7.4	5.2	2.6	5.2	0.7	0.7	0.0	0.0	2.7
Infomation Demo in town	1.0	1.3	0.0	0.0	0.7	0.0	0.3	0.0	0.4
Information TV/Radio/Newpaper	2.6	12.3	6.3	3.3	0.3	0.0	0.7	0.7	3.0
Information others	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Received promotion	61.7	60.0	62.4	49.7	91.1	59.3	90.8	94.0	72.8
Did find promotion helpful	58.2	57.4	57.8	49.0	90.4	58.7	89.2	94.0	70.8
Promotion changed behaviour	56.6	54.8	56.1	47.1	79.8	56.7	87.9	93.4	67.7
N	311	155	303	153	302	150	305	151	1830
in percent									
Own VIP latrine	28.9	43.9	15.2	19	11.9	2	7.2	13.9	17.2
Shared VIP latrine	10.6	4.5	5.6	2.6	4.3	6.7	1.6	2.6	5.1
Bushes	0	0	0	0	3	6.7	8.9	6.6	3.1
Own PIT latrine	47.9	42.6	43.2	49.7	52	54	58	57.6	50.5
Shared PIT latrine	12.5	9	36	28.8	28.8	30.7	24.3	19.2	24.2
N	311	155	303	153	302	150	305	151	1830
in percent									
raw water has no impact	0.6	1.3	1.3	1.3	1.0	0.7	2.6	2.6	1.4
raw water causes Typhoid fever	89.4	94.2	91.4	90.8	93.7	96.0	83.9	96.7	91.2
raw water causes Diarrhoea	62.4	51.0	45.9	53.6	78.8	85.3	76.1	85.4	66.7
raw water causes Malaria	11.9	9.7	12.5	5.2	17.2	14.0	16.7	24.5	14.2
raw water causes Cholera	46.3	51.0	44.2	44.4	53.3	55.3	40.3	57.6	48.0
raw water causes Head ache	5.1	3.9	6.9	2.6	2.6	0.7	3.0	4.6	3.9
raw water causes Worms	38.9	35.5	28.7	26.1	2.3	0.7	4.3	2.0	17.9
raw water causes germs	16.4	9.7	8.6	4.6	2.6	7.3	2.3	2.0	7.0
raw water causes Amoeba	51.8	54.8	52.5	41.8	52.6	50.0	36.7	61.6	49.6
raw water causes Skin diseases	14.5	7.1	5.0	2.0	1.3	0.0	1.3	0.0	4.5
N	311	155	303	153	302	150	305	151	1830
in percent									
never wash hands	0	1.3	0.7	0.7	0	0	0.3	1.3	0.4
wash hands before cooking	58.8	44.5	47.9	43.8	65.2	62.7	41	67.5	53.7
wash hands after toilet	78.1	76.8	74.6	80.4	92.4	97.3	89.8	89.4	84.4
wash hands before eating	76.2	73.5	69	76.5	83.4	81.3	68.5	85.4	75.9
wash hands after eating	64.3	49.7	48.5	52.3	62.3	60	42.3	72.2	55.7
wash hands whenever dirty	47.9	54.2	50.2	45.8	31.8	34	25.2	41.7	40.5
N	311	155	303	153	302	150	305	151	1830
Where did you buy Chlorine:									
Market	11.9	12.3	4.3	3.3	70.9	71.3	70.5	84.8	40.3
NGO	1.9	1.3	1.7	0	0.3	0	1.3	0	1
Pharmacy	20.3	29	15.8	26.8	0	4	2.6	1.3	11.6
Household Ware Shop									
Water Kiosk	5.1	9	7.6	7.8	0	0	1.3	0	3.8
CBO door to door	9.6	5.2	19.1	15	6.3	2	0.7	0.7	7.9
Supermarket	4.8	5.2	6.6	15.7	0	0	0.3	1.3	3.8
Small shop	28.9	28.4	13.5	19	0.7	0	6.6	0.7	12.4
MFI	0.6	0	0	0.7	0	0	0	0	0.2
Other	0.6	0	2	1.3	0	0	0.3	0	0.6
N	311	155	303	153	302	150	305	151	1830
Where did you buy your filter:	Percent								
Market	0.6	1.9	0	0	0.3	0	0	8.6	1
NGO	1	0	2.6	0.7	0	0	0.3	0	0.7

Pharmacy	1	0.6	0	0	0	0	0	0	0.2
Household Ware Shop	0	0.6	0.3	0.7	0	0	0	0	0.2
Water Kiosk	3.9	5.2	0.3	0.7	0	0	0	0	1.2
CBO door to door	1.6	0.6	8.3	5.9	0.7	3.3	0	0.7	2.6
Supermarket	0	0	0	0	0.7	0	0	0	0.1
Small shop	0.6	0	0	0	0	0	0	0	0.1
MFI	0.3	0	0	0	0.3	0	0	0	0.1
Other	0	0	1	0	0.7	0	1	0	0.4
I do have a filter	6.8	8.4	12.5	7.8	2	3.3	1.6	9.3	6.2
N	311	155	303	153	302	150	305	151	1830
Where did you buy your filter:	Numbers								
Market	2	3	0	0	1	0	0	13	19
NGO	3	0	8	1	0	0	1	0	13
Pharmacy	3	1	0	0	0	0	0	0	4
Household Ware Shop	0	1	1	1	0	0	0	0	3
Water Kiosk	12	8	1	1	0	0	0	0	22
CBO door to door	5	1	25	9	2	5	0	1	48
Supermarket	0	0	0	0	2	0	0	0	2
Small shop	2	0	0	0	0	0	0	0	2
MFI	1	0	0	0	1	0	0	0	2
Other	0	0	3	0	2	0	3	0	8
Total calcutated	***28***	***14***	***38***	***12***	***8***	***5***	***4***	***14***	***123***
I do have a filter	21	13	38	12	6	5	5	14	114
Filter use in numbers	**19**	**9**	**41**	**10**	**7**	**5**	**5**	**4**	**100**
									1830
What would you buy with 2000 KSH?	multiple answers possible!!								
Radio	3.9	3.9	3.6	1.3	1.7	2	2.3	0.7	2.6
Chicken	13.5	18.1	10.2	2.6	4.6	8.7	6.6	3.3	8.6
Mobile Phone	11.3	6.5	7.3	4.6	2	2.7	3.3	2	5.3
Water Filter	25.4	25.2	23.4	20.9	15.2	24	12.5	13.2	19.7
Goat	7.4	9.7	6.3	11.1	18.5	19.3	20.7	20.5	13.8
Food	34.1	28.4	38.6	31.4	23.8	21.3	20	22.5	28.1
Clothes	10.6	3.2	13.5	12.4	4.3	4.7	3.6	2	7.2
School fees	9.3	9.7	5.6	11.1	28.8	20	20.7	26.5	16.3
Start own business	1.3	0.6	2	2	2.3	3.3	4.3	2.6	2.3
Invest money	5.1	3.9	5.3	5.2	4	7.3	5.2	4	5.0
Buy household goods	10.9	16.8	18.8	18.3	32.1	27.3	23.6	33.1	22.1
Willingness to pay for filters									1830
0-499 ksh	48.2	34.2	44.2	30.7	59.3	57.3	51.5	49	48.1
500-999 ksh	29.6	36.8	41.3	52.3	36.8	38.7	43.9	47	39.8
1000-1499 ksh	17	22.6	12.5	15.7	3.3	4	3.6	4	10
1500-1999 ksh	4.8	6.6	2	1.3	0.3	0	1	0	2
2000-2499 ksh	0	0	0	0	0	0	0	0	0
2500-2999 ksh	0.3	0	0	0	0	0	0	0	0.1
3000-3499 ksh	0	0	0	0	0.3	0	0	0	0.1
> 3500 ksh	0	0	0	0	0	0	0	0	0
HWTS use vs Turbidity			$x^2(1)=14.767$ p=0.000	$x^2(1)=11.720$ p=0.000					$x^2(1)=17.279$ p=0.000
HWTS use vs Piped water supply									$x^2(1)=11.087$ p=0.001
HWTS use vs Source Rainwater			$x^2(1)=4.169$ p=0.041			$x^2(1)=4.348$ p=0.037			$x^2(1)=7.581$ p=0.006
HWTS use vs Source Shallow well									
HWTS use vs River, Open well									
HWTS use vs Pond			$x^2(1)=4.056$ p=0.044						
HWTS use vs Eduction level			$x^2(2)=14.999$ p=0.001						$x^2(3)=22.576$ p=0.000
HWTS use vs Gender									ns
HWTS use vs Knowledge on HWTS	no question								
HWTS use vs Importance of treating drinking water	$x^2(4)=80.057$ p=0.000	$x^2(4)=36.325$ p=0.000	$x^2(3)=71.364$ p=0.000	$x^2(2)=28.216$ p=0.000	$x^2(3)=80.349$ p=0.000	$x^2(3)=17.613$ p=0.001	$x^2(3)=27.316$ p=0.000	$x^2(2)=45.953$ p=0.000	$x^2(4)=355.676$ p=0.000
HWTS use vs drinking raw water is good for health	$x^2(5)=19.842$ p=0.001		$x^2(3)=16.563$ p=0.001	$x^2(3)=9.551$ p=0.023	$x^2(6)=20.828$ p=0.002	$x^2(5)=17.057$ p=0.004	$x^2(6)=26.945$ p=0.000		$x^2(6)=88.429$ p=0.000
HWTS use vs how many people in the area use HWTS	$x^2(4)=15.650$ p=0.004	$x^2(5)=11.079$ p=0.050	$x^2(4)=17.901$ p=0.001		$x^2(5)=63.640$ p=0.000	$x^2(4)=21.024$ p=0.000	$x^2(5)=33.353$ p=0.000	$x^2(5)=61.101$ p=0.000	$x^2(5)=162.067$ p=0.000
HWTS use vs HWTS promotion received	$x^2(1)=9.411$ p=0.002		$x^2(1)=8.014$ p=0.005	$x^2(1)=13.659$ p=0.000	$x^2(1)=9.259$ p=0.002	$x^2(1)=9.405$ p=0.002	$x^2(1)=4.446$ p=0.035	$x^2(1)=29.231$ p=0.000	$x^2(1)=77.989$ p=0.000
HWTS use vs info through health center	$x^2(1)=4.872$ p=0.027		$x^2(1)=6.528$ p=0.011	$x^2(1)=4.400$ p=0.036					$x^2(1)=9.189$ p=0.002
HWTS use vs info through CBO			$x^2(1)=4.285$ p=0.038	$x^2(1)=6.087$ p=0.014		$x^2(1)=7.551$ p=0.006			$x^2(1)=4.250$ p=0.039
HWTS use vs info through Promoter								$x^2(1)=10.752$ p=0.001	$x^2(1)=24.962$ p=0.000
HWTS use vs info through shop owner									ns
HWTS use vs info through community health worker				$x^2(1)=3.939$ p=0.047			$x^2(1)=14.145$ p=0.000		ns
HWTS use vs info through community meeting									$x^2(1)=3.742$ p=0.053
HWTS use vs info through demonstration in town									ns
HWTS use vs info through TV, radio, newspaper			$x^2(1)=3.876$ p=0.049						ns
HWTS use vs info through other									ns
HWTS use vs found promotion helpful	$x^2(2)=12.488$ p=0.002		$x^2(2)=28.513$ p=0.002	$x^2(2)=17.878$ p=0.000	$x^2(2)=10.716$ p=0.005	$x^2(2)=9.540$ p=0.008	$x^2(2)=26.550$ p=0.000	$x^2(2)=29.231$ p=0.000	$x^2(2)=117.605$ p=0.000

HWTS use vs promotion changed behaviour	$x^2(2)=16.287$ p=0.000	$x^2(2)=10.221$ p=0.006	$x^2(2)=31.677$ p=0.000	$x^2(2)=16.953$ p=0.000	$x^2(2)=138.821$ p=0.000	$x^2(2)=25.411$ p=0.000	$x^2(2)=71.713$ p=0.000	$x^2(2)=48.188$ p=0.000	$x^2(2)=314.874$ p=0.000
HWTS use vs info source radio									
HWTS use vs info source TV									
HWTS use vs info source ComMeet									
HWTS use vs info source neighbours									
HWTS use vs monthly expenditure			$x^2(7)=38.438$ p=0.000		$x^2(6)=22.333$ p=0.001				$x^2(7)=35.970$ p=0.000
HWTS use vs monthly income									ns
HWTS use vs money available per week	$x^2(7)=16.692$ p=0.044								ns
Frequent use chlorination vs willingness to pay chlorine	$x^2(5)=14.273$ p=0.014			$x^2(2)=6.323$ p=0.042			$x^2(2)=6.324$ p=0.042		$x^2(5)=12.384$ p=0.030
Frequent use filter vs willingness to pay for filter	$x^2(4)=15.513$ p=0.004		$x^2(3)=13.854$ p=0.003		$x^2(4)=78.589$ p=0.000	$x^2(2)=8.205$ p=0.017	$x^2(3)=8.120$ p=0.044		$x^2(5)=83.575$ p=0.000
HWTS use vs handwashing index			$x^2(4)=13.630$ p=0.009	$x^2(4)=15.139$ p=0.004	$x^2(4)=30.538$ p=0.000	$x^2(4)=15.496$ p=0.004	$x^2(5)=17.503$ p=0.004		$x^2(5)=55.341$ p=0.000
HWTS use vs type of sanitation			$x^2(3)=9.899$ p=0.019				$x^2(3)=9.773$ p=0.044		$x^2(4)=18.529$ p=0.001

A. Introduction

A01 **Introduce yourself** !

Please interview the person of the household that is responsible for the water for the family.

Hello, my name is *(name of interviewer)* ……and I work for .....(*name of the NGO*). For the planned project, we make a baseline survey about the distribution condition and practices of HWTS products. We are trying to optimize the access of HWTS products to improve your water quality. It will not take more than 30 minutes to complete the questionnaire.

B. General information regarding the interview

B01 Number of questionnaire: .....

B02 Date of the interview:…… .....

B03 Name of the interviewer:.....

C. Data of the interviewed person

C01 Residential area:.....

C02 GPS data:.....

C03 Name of the person interviewed:.....

C04 Gender of the person:.....

C05 Name of the husband:.....

C06 Occupation:

[1] ❑ None
[2] ❑ Housewife
[3] ❑ Student
[4] ❑ Retired
[5] ❑ Agricultural
[6] ❑ Self employed
[7] ❑ Employed
[8] ❑ Other.....

C07 Number of adults in household:.....

C08 Number of children in household:.....

C09 Telephone/ Mobile: .....

D. Current WASH conditions in the households

D01 What is the current source of drinking water used in the household (multiple choices possible):

[1] ❑ Deep borehole
[2] ❑ Shallow well
[3] ❑ Piped water supply
[4] ❑ River, stream or open well
[5] ❑ Water vendors
[6] ❑ Water trucking
[7] ❑ Rain water
[8] ❑ Pond

D02 How is the quality of the drinking water?

[1] ❑ Clear
[2] ❑ Turbid

D03 Which HWTS do you know? (multiple choices possible)

[1] ❑ Boiling
[2] ❑ Chlorination (Aquatabs, Waterguard)
[3] ❑ Coagulation/Chlorination (PUR)
[4] ❑ Filtration with a cloth
[5] ❑ SODIS
[6] ❑ Filter
[7] ❑ None

D04 What kind of method do you use to treat the water? (multiple choices possible)	*D05* How often do you use it?
[1] ❑ Boiling	*D05 a* [1] ❑ always [2] ❑ often [3] ❑ sometimes [4] ❑ seldom [5] ❑ never
[2] ❑ Chlorination (Waterguard, Aquatabs)	*D05 b* [1] ❑ always [2] ❑ often [3] ❑ sometimes [4] ❑ seldom [5] ❑ never
[3] ❑ Coagulation/Chlorination (PUR)	*D05 c* [1] ❑ always [2] ❑ often [3] ❑ sometimes [4] ❑ seldom [5] ❑ never
[4] ❑ Filtration with a cloth	*D05 d* [1] ❑ always [2] ❑ often [3] ❑ sometimes [4] ❑ seldom [5] ❑ never
[5] ❑ SODIS	*D05 e* [1] ❑ always [2] ❑ often [3] ❑ sometimes [4] ❑ seldom [5] ❑ never
[6] ❑ Filter	*D05 f* [1] ❑ always [2] ❑ often [3] ❑ sometimes [4] ❑ seldom [5] ❑ never
[7] ❑ None	

D06 Which system do you use the most?

[1] ❑ Boiling
[2] ❑ Chlorination (Aquatabs, Waterguard)
[3] ❑ Coagulation/Chlorination (PUR)
[4] ❑ Filtration with a cloth
[5] ❑ SODIS
[6] ❑ Filter
[7] ❑ None

D07 Can you show me the system that you are using?

[1] ❑ Filter is available and used
[2] ❑ Filter is available and dry
[3] ❑ Chlorine solution (Waterguard, Aquatabs) is available
[4] ❑ PUR is available
[5] ❑ Filter cloth is available
[6] ❑ SODIS bottles are exposed
[7] ❑ SODIS bottles are available in the house
[8] ❑ System is not visible (Boiling)
[9] ❑ None

D08 Do you like the system/method that you are using the most?

[1] ❑ I dislike it very much
[2] ❑ I dislike it
[3] ❑ I neither dislike nor like it
[4] ❑ I like it
[5] ❑ I like it very much

D09 Which system would you like to use?	*D10* Why would you like to use it? (multiple choices possible)
[1] ❑ Boiling	*D10 a* [1] ❑ Cheap [2] ❑ Easy to use [3] ❑ Durable [4] ❑ Water tastes good [5] ❑ Product looks attractive [6] ❑ Safe water is treated quickly [7] ❑ No recurring costs [8] ❑ Kills Germs
[2] ❑ Chlorination (Waterguard, Aquatabs)	*D10 b* [1] ❑ Cheap [2] ❑ Easy to use [3] ❑ Durable [4] ❑ Water tastes good [5] ❑ Product looks attractive [6] ❑ Safe water is treated quickly [7] ❑ No recurring costs [8] ❑ Kills Germs
[3] ❑ Coagulation/Chlorination (PUR)	*D10 c* [1] ❑ Cheap [2] ❑ Easy to use [3] ❑ Durable [4] ❑ Water tastes good [5] ❑ Product looks attractive [6] ❑ Safe water is treated quickly [7] ❑ No recurring costs [8] ❑ Kills Germs
[4] ❑ Filtration with a cloth	*D10 d* [1] ❑ Cheap [2] ❑ Easy to use [3] ❑ Durable [4] ❑ Water tastes good [5] ❑ Product looks attractive [6] ❑ Safe water is treated quickly [7] ❑ No recurring costs [8] ❑ Kills Germs
[5] ❑ SODIS	*D10 e* [1] ❑ Cheap [2] ❑ Easy to use [3] ❑ Durable [4] ❑ Water tastes good [5] ❑ Product looks attractive [6] ❑ Safe water is treated quickly [7] ❑ No recurring costs [8] ❑ Kills Germs

[6] ❑ Filter	*D10 f* [1] ❑ Cheap [2] ❑ Easy to use [3] ❑ Durable [4] ❑ Water tastes good [5] ❑ Product looks attractive [6] ❑ Safe water is treated quickly [7] ❑ No recurring costs [8] ❑ Kills Germs
[7] ❑ None	*D10 g* [1] ❑ Cost [2] ❑ Not available in the area [3] ❑ Water is already safe [4] ❑ Like the water as it is

D11 Which system would you **not** like to use?	*D12* Why would you **not** like to use it? (multiple choices possible)
[1] ❑ Boiling	*D12 a* [1] ❑ Expensive [2] ❑ Difficult to use [3] ❑ Not durable [4] ❑ Water tastes bad [5] ❑ Product is not attractive [6] ❑ Takes too much time to treat [7] ❑ Recurring costs too high [8] ❑ Does not kills Germs
[2] ❑ Chlorination (Waterguard, Aquatabs)	*D12 b* [1] ❑ Expensive [2] ❑ Difficult to use [3] ❑ Not durable [4] ❑ Water tastes bad [5] ❑ Product does not attractive [6] ❑ Takes too much time to treat [7] ❑ Recurring costs too high [8] ❑ Does not kills Germs
[3] ❑ Coagulation/Chlorination (PUR)	*D12 c* [1] ❑ Expensive [2] ❑ Difficult to use [3] ❑ Not durable [4] ❑ Water tastes bad [5] ❑ Product does not attractive [6] ❑ Takes too much time to treat [7] ❑ Recurring costs too high [8] ❑ Does not kills Germs
[4] ❑ Filtration with a cloth	*D12 d* [1] ❑ Expensive [2] ❑ Difficult to use [3] ❑ Not durable [4] ❑ Water tastes bad [5] ❑ Product does not attractive [6] ❑ Takes too much time to treat [7] ❑ Recurring costs too high [8] ❑ Does not kills Germs

[5] ❑ SODIS	*D12 e* [1] ❑ Expensive [2] ❑ Difficult to use [3] ❑ Not durable [4] ❑ Water tastes bad [5] ❑ Product does not attractive [6] ❑ Takes too much time to treat [7] ❑ Recurring costs too high [8] ❑ Does not kills Germs
[6] ❑ Filter	*D12 f* [1] ❑ Expensive [2] ❑ Difficult to use [3] ❑ Not durable [4] ❑ Water tastes bad [5] ❑ Product does not attractive [6] ❑ Takes too much time to treat [7] ❑ Recurring costs too high [8] ❑ Does not kills Germs

D13 Do you think it is important to treat your drinking water?

[1] ❑ Not important at all
[2] ❑ Not very important
[3] ❑ Does not matter
[4] ❑ A bit important
[5] ❑ Very important

D14 How many people in this area do you know who are using HWTS?

[1] ❑ (Almost) nobody (0%)
[2] ❑ Some of them (25%)
[3] ❑ Half of them (50%)
[4] ❑ Most of them (75%)
[5] ❑ (Almost) all (100%)

D15 Where do you store your drinking water?

[1] ❑ PET bottles
[2] ❑ 5l jerrycan
[3] ❑ 10l jerrycan
[4] ❑ 20l jerrycan
[5] ❑ 50-100l jerrycan
[6] ❑ storage tank bigger than 100l
[7] ❑ Clay containers
[8] ❑ Other containers
[9] ❑ None

D16 Do you clean the water storage containers?

[1] ❑ never [2] ❑ once a month [3] ❑ once a week [4] ❑ daily

D17 How do you clean the water storage containers?

[1] ❑ rinse with water
[2] ❑ rinse with water and soap
[3] ❑ disinfect with chlorine
[4] ❑ Do not clean the water storage containers

D18 Do you think that consuming raw water is good or bad for your health?

[1] ❑ Very bad
[2] ❑ Bad
[3] ❑ Quite bad
[4] ❑ Neither good nor bad
[5] ❑ Quite good
[6] ❑ Good
[7] ❑ Very good

D19 What impacts can untreated drinking water have? (multiple choices possible)

[1] ❑ None
[2] ❑ Typhoid
[3] ❑ Diarrhoea
[4] ❑ Malaria
[5] ❑ Cholera
[6] ❑ Head ache
[7] ❑ Worms
[8] ❑ Diseases (Germs)
[9] ❑ Amoeba
[10] ❑ Skin diseases

D20 What kind of sanitation facility do you use?

[1] ❑ Own VIP latrine
[2] ❑ Shared VIP latrine
[3] ❑ Using the bushes
[4] ❑ Own pit latrine with slab
[5] ❑ Shared pit latrine with slab

D21 When do you wash your hands? (multiple choices possible)

[1] ❑ Never
[2] ❑ Before preparing the meal
[3] ❑ After toilet
[4] ❑ Before eating
[5] ❑ After eating
[6] ❑ Whenever they are dirty

E. Current purchasing behaviour of households

E01 From where do you buy a mobile phone?

[1] ❑ at the market
[2] ❑ small kiosk
[3] ❑ in the village in a shop
[4] ❑ in an all purpose household good and hardware shop
[5] ❑ in a big supermarket

E02 From where do you buy a cooking pan (sufuria)?

[1] ❑ at the market
[2] ❑ small kiosk
[3] ❑ in the village in a shop
[4] ❑ in an all purpose household good and hardware shop
[5] ❑ in a big supermarket

E03 From where do you buy a radio?

[1] ❑ at the market
[2] ❑ small kiosk
[3] ❑ in the village in a shop
[4] ❑ in an all purpose household good and hardware shop
[5] ❑ in a big supermarket

E04 From where do you buy a TV?

[1] ❑ at the market
[2] ❑ small kiosk
[3] ❑ in the village in a shop
[4] ❑ in an all purpose household good and hardware shop
[5] ❑ in a big supermarket

E05 From where do you buy detergent?

[1] ❑ at the market
[2] ❑ small kiosk
[3] ❑ in the village in a shop
[4] ❑ in a all purpose household good and hardware shop
[5] ❑ in a big supermarket

E06 From where do you buy chlorine products?

[1] ❑ at the market
[2] ❑ small kiosk
[3] ❑ in the village in a shop
[4] ❑ in a all purpose household good and hardware shop
[5] ❑ in a big supermarket
[6] ❑ at the chemist/pharmacy

E07 From where do you buy soap?

[1] ❑ at the market
[2] ❑ small kiosk
[3] ❑ in the village in a shop
[4] ❑ in a all purpose household good and hardware shop
[5] ❑ in a big supermarket

E08 From where do you buy air time for your mobile?

[1] ❑ at the market
[2] ❑ small kiosk
[3] ❑ in the village in a shop
[4] ❑ in a all purpose household good and hardware shop
[5] ❑ in a big supermarket

E09 Where would you prefer to buy a household water treatment system? (multiple choice)

[1] ❑ Market
[2] ❑ From a NGO
[3] ❑ Pharmacy
[4] ❑ Household ware shop
[5] ❑ Water kiosk
[6] ❑ Community based organisation, which come door to door or have a community mobilisation
[7] ❑ Supermarket
[8] ❑ Small shops /kiosk
[9] ❑ From a microfinance institute
[10] ❑ Others.....

E10 Who in your family decides about buying household goods up to 500 KSH?

[1] ❑ husband
[2] ❑ wife
[3] ❑ both
[4] ❑ eldest person in the household

E11 Who in your family decides about buying household goods of over 500 KSH?

[1] ❑ husband
[2] ❑ wife
[3] ❑ both
[4] ❑ eldest person in the household

E12 Who in your family decides about buying cooking utensils?

[1] ❑ husband
[2] ❑ wife
[3] ❑ both
[4] ❑ eldest person in the household

E13 Who in your family decides about buying food?

[1] ❑ husband
[2] ❑ wife
[3] ❑ both
[4] ❑ eldest person in the household

E14 Who in your family decides about buying electronic goods?

[1] ❑ husband
[2] ❑ wife
[3] ❑ both
[4] ❑ eldest person in the household

E15 Who in your family decides about children education?

[1] ❑ husband
[2] ❑ wife
[3] ❑ both
[4] ❑ eldest person in the household
[5] ❑ We do not have children/ Children are not in school ages yet

E16 How much is your monthly expenditure?

[1] ❑ under 3'000 KSH
[2] ❑ 3'000-4'000 KSH
[3] ❑ 4'000-5'000 KSH
[4] ❑ 5'000-6'000 KSH
[5] ❑ 6'000-7'000 KSH
[6] ❑ 7'000-8'000 KSH
[7] ❑ More than 8'000 KSH

E17 How much is your monthly income?

[1] ❑ under 3'000 KSH
[2] ❑ 3'000-4'000 KSH
[3] ❑ 4'000-5'000 KSH
[4] ❑ 5'000-6'000 KSH
[5] ❑ 6'000-7'000 KSH
[6] ❑ 7'000-8'000 KSH
[7] ❑ More than 8'000 KSH

E18 How much money does your family have available to spend per week?

[1] ❑ 100-500 KSH
[2] ❑ 500-1'000 KSH
[3] ❑ 1'000-1'500 KSH
[4] ❑ 1'500-2'000 KSH
[5] ❑ 2'000-2'500 KSH
[6] ❑ More than 2'500 KSH

E19 What would you buy if you would have 2'000 KSH available?

[1] ❑ Radio
[2] ❑ Chicken
[3] ❑ Mobile
[4] ❑ Water filter
[5] ❑ Goat
[6] ❑ Food
[7] ❑ Cloth
[8] ❑ School fees
[9] ❑ Start own business
[10] ❑ Invest the money
[11] ❑ Buy household goods

E20 Sort the pictures according to your value perception:

	Most valuable	Second place	Third place	Fourth place	Fifth place	Sixth place	Seventh place	Eighth place	Ninth place	Least valuable
E20a Radio	[1]❑	[2]❑	[3]❑	[4]❑	[5]❑	[6]❑	[7]❑	[8]❑	[9]❑	[10]❑
E20b TV	[1]❑	[2]❑	[3]❑	[4]❑	[5]❑	[6]❑	[7]❑	[8]❑	[9]❑	[10]❑
E20c Mobile	[1]❑	[2]❑	[3]❑	[4]❑	[5]❑	[6]❑	[7]❑	[8]❑	[9]❑	[10]❑
E20d Water filter	[1]❑	[2]❑	[3]❑	[4]❑	[5]❑	[6]❑	[7]❑	[8]❑	[9]❑	[10]❑
E20e Cooking pan (sufuria)	[1]❑	[2]❑	[3]❑	[4]❑	[5]❑	[6]❑	[7]❑	[8]❑	[9]❑	[10]❑
E20f T-shirt	[1]❑	[2]❑	[3]❑	[4]❑	[5]❑	[6]❑	[7]❑	[8]❑	[9]❑	[10]❑
E20g Chlorine bottle	[1]❑	[2]❑	[3]❑	[4]❑	[5]❑	[6]❑	[7]❑	[8]❑	[9]❑	[10]❑
E20h Jerry can	[1]❑	[2]❑	[3]❑	[4]❑	[5]❑	[6]❑	[7]❑	[8]❑	[9]❑	[10]❑
E20i SODIS	[1]❑	[2]❑	[3]❑	[4]❑	[5]❑	[6]❑	[7]❑	[8]❑	[9]❑	[10]❑
E20j Coagulation/ chorination (PUR)	[1]❑	[2]❑	[3]❑	[4]❑	[5]❑	[6]❑	[7]❑	[8]❑	[9]❑	[10]❑

E21 What would you be willing to pay for?

	0-50 KSH	50-100 KSH	100-150 KSH	150-200 KSH	200-250 KSH	250-300 KSH	300-350 KSH	more than 350 KSH
E21a Chlorine (Aquatabs, Waterguard)	1❑	2❑	3❑	4❑	5❑	6❑	7❑	8❑
E21b Coagulation/chlorination (PUR)	1❑	2❑	3❑	4❑	5❑	6❑	7❑	8❑
E21c SODIS	1❑	2❑	3❑	4❑	5❑	6❑	7❑	8❑

E22 What would you be willing to pay for a ceramic filter?

1 ❑ 0-500 KSH
2 ❑ 500-1'000 KSH
3 ❑ 1'000-1'500 KSH
4 ❑ 1'500-2'000 KSH
5 ❑ 2'000-2'500 KSH
6 ❑ 2'500-3'000 KSH
7 ❑ 3'000-3'500 KSH
8 ❑ More than 3'500 KSH

E23 How much do you pay for the treatment of one case of diarrhoea?

1 ❑ less than 100 KSH
2 ❑ 100-500 KSH
3 ❑ 500-1'000 KSH
4 ❑ 1'000-1'500 KSH
5 ❑ 1'500-2'000 KSH
6 ❑ 2'000-2'500 KSH
7 ❑ More than 2'500 KSH

E24 Through which media do you get information? (multiple choices possible)

1 ❑ Radio
2 ❑ Newspaper
3 ❑ TV
4 ❑ Community meetings
5 ❑ Through neighbours

F. Wealth index

F01 Does anyone from your household own any of these items (are functioning)? (multiple choices possible)

1 ❑ Electricity
2 ❑ Radio
3 ❑ TV
4 ❑ Mobile phone
5 ❑ Bicycle
6 ❑ Motorbike
7 ❑ Car
8 ❑ Fridge
9 ❑ Watch

F02 How many of those animals do you have?

	0	1-5	5-10	10-15	15-20	20-25	25-30	30-35	more than 35
F02a Cows	1❑	2❑	3❑	4❑	5❑	6❑	7❑	8❑	9❑
F02b Donkeys	1❑	2❑	3❑	4❑	5❑	6❑	7❑	8❑	9❑
F02c Sheep	1❑	2❑	3❑	4❑	5❑	6❑	7❑	8❑	9❑
F02d Goats	1❑	2❑	3❑	4❑	5❑	6❑	7❑	8❑	9❑
F02e Chickens	1❑	2❑	3❑	4❑	5❑	6❑	7❑	8❑	9❑
F02f Pigs	1❑	2❑	3❑	4❑	5❑	6❑	7❑	8❑	9❑
F02g Rabits	1❑	2❑	3❑	4❑	5❑	6❑	7❑	8❑	9❑

F03 What kind of fuel do you use the most for cooking? (multiple choice)

1 ❑ Charcoal with improved stove
2 ❑ Charcoal with unimproved stove
3 ❑ Wood with improved stove
4 ❑ Wood with unimproved stove
5 ❑ Kerosene
6 ❑ Gas
7 ❑ Electricity

Observations (Interviewer)

F04 What type of walls does the main house have?

1 ❑ Cement/Concrete
2 ❑ Wood planks
3 ❑ Corrugated iron
4 ❑ Mud
5 ❑ Stone

F05 What type of roof is it?

1 ❑ Thatch, straw
2 ❑ Bricks
3 ❑ Corrugated iron

F06 What type of floor is it?

1 ❑ Cement/Concrete
2 ❑ Floor plates
3 ❑ Earth
4 ❑ Dung

F07 How many rooms does the main house have?

1 ❑ One
2 ❑ Two
3 ❑ Three
4 ❑ Four
5 ❑ More than five

Baseline Survey - Kenya (English)

Last Modified by: Carina Flückiger **on** 26 Feb 2013 04:10:53 **Revision number:** 285 **Field Count:** 114

Section 1. Introduction

1.1 Introduction

[Please introduce yourself. Please interview the person of the household that is responsible for the water for the family.] Hello, my name is (name of interviewer) and I work for (name of the NGO).

1.2 Introduction 2

For the planned project, we're doing a baseline survey about the distribution conditions and practices of HWTS products. We are trying to optimize the access of HWTS products to improve your water quality. It will not take more than 30 minutes to complete the questionnaire.

Section 2. General information regarding the interview

2.1 Number of questionnaire

Number of questionnaire.

Expects a single line text response (**required**)

2.2 Date of the interview

Date of the interview.

Expects a date response (**required**)

2.3 Name of the interviewer

Name of the interviewer.

Expects a single line text response (**required**)

Section 3. Data of the interviewed person

3.1 Residential area

Residential area.

Expects a single line text response (**required**)

3.2 GPS location

Please capture the GPS location.

Expects a latitude and longitude coordinate (optional)

3.3 Name of the person interviewed

Name of the person interviewed.

Expects a single line text response (optional)

3.4 Gender of the person

Gender of the person.

Expects a single option response (**required**)

- ☐ Male [1]
- ☐ Female [2]

3.5 Age

Age.

Expects a numeric response (optional)

Constraints

*Response must be **Greater Than or Equal '0'***

3.6 Name of the spouse

Name of the spouse.

Expects a single line text response (optional)

3.7 Number of adults in household

Number of adults in household.

Expects a numeric response (optional)

Constraints

*Response must be **Greater Than or Equal '0'***

3.8 Number of children in household

Number of children in household.

Expects a numeric response (optional)

Constraints

*Response must be **Greater Than or Equal '0'***

3.9 Education level of the person interviewed

Education level of the person interviewed.

Expects a single option response (optional)

- ☐ Primary [1]
- ☐ Secondary [2]
- ☐ College [3]

3.10 Education level of the spouse

Education level of the spouse.

Expects a single option response (optional)

- ☐ Primary [1]
- ☐ Secondary [2]
- ☐ College [3]

3.11 Telephone mobile

Telephone/ mobile.

Expects a phone number (optional)

Section 4. Current WASH conditions in the households

4.1 Sort the pictures

Sort the pictures according to your value perception.

4.2 Rate - radio

Radio.

Expects a numeric response (**required**)

Constraints
*Response must be **Greater Than or Equal '1'***
*Response must be **Less Than or Equal '10'***

4.3 Rate - TV

TV.

Expects a numeric response (**required**)

Constraints
*Response must be **Greater Than or Equal '1'***
*Response must be **Less Than or Equal '10'***

4.4 Rate - mobile

Mobile.

Expects a numeric response (**required**)

Constraints
*Response must be **Greater Than or Equal '1'***
*Response must be **Less Than or Equal '10'***

4.5 Rate - water filter

Water filter.

Expects a numeric response (**required**)

Constraints
*Response must be **Greater Than or Equal '1'***
*Response must be **Less Than or Equal '10'***

4.6 Rate - cooking pan (sufuria)

Cooking pan (sufuria).

Expects a numeric response (**required**)

Constraints
*Response must be **Greater Than or Equal '1'***
*Response must be **Less Than or Equal '10'***

4.7 Rate - T-shirt

T-shirt.

Expects a numeric response (**required**)

Constraints
*Response must be **Greater Than or Equal '1'***
*Response must be **Less Than or Equal '10'***

4.8 Rate - chlorine bottle

Chlorine bottle.

Expects a numeric response (**required**)

Constraints
*Response must be **Greater Than or Equal '1'***
*Response must be **Less Than or Equal '10'***

4.9 Rate - jerry can

Jerry can.

Expects a numeric response (**required**)

Constraints
*Response must be **Greater Than or Equal '1'***
*Response must be **Less Than or Equal '10'***

4.10 Rate - SODIS

SODIS.

Expects a numeric response (**required**)

Constraints
*Response must be **Greater Than or Equal '1'***
*Response must be **Less Than or Equal '10'***

4.11 Rate - Coagulation chlorination (PUR)

Coagulation/ chlorination (PUR).

Expects a numeric response (**required**)

Constraints
*Response must be **Greater Than or Equal '1'***
*Response must be **Less Than or Equal '10'***

4.12 Current source of drinking water

What is the current source of drinking water used in the household (multiple choices possible)

Expects multiple selected options (**required**)

- ☐ **Deep borehole** [1]
- ☐ **Shallow well** [2]
- ☐ **Piped water supply** [3]
- ☐ **River, stream or open well** [4]
- ☐ **Water vendors** [5]
- ☐ **Water trucking** [6]
- ☐ **Rain water** [7]
- ☐ **Pond** [8]

4.13 Quality of the drinking water

How is the quality of the drinking water?

Expects a single option response (**required**)

- ☐ **Clear** [1]
- ☐ **Turbid** [2]

4.14 Promotion on Water Sanitation and Hygiene

Did you receive any promotion on Water, Sanitation and Hygiene and drinking water treatment methods in the last 10 months?

Expects a single option response (**required**)

- ☐ **Yes** [1]
- ☐ **No** [2]

Prerequisites
Skip when ***Promotion on Water Sanitation and Hygiene (4.14)*** **Equals 'No [2]'**

4.15 Where you received promotion information

From whom did you receive a promotion/ information? (multiple choices possible)

Expects multiple selected options (**required**)

- ☐ **Health centre** [1]
- ☐ **Community based organisation** [2]
- ☐ **Promoter** [3]
- ☐ **Shop owner** [4]
- ☐ **Community health worker** [5]
- ☐ **Barazza** [6]
- ☐ **Demonstration in the town** [7]
- ☐ **TV/ radio/ newspaper** [8]
- ☐ **Others** [9]

Prerequisites
Skip when ***Promotion on Water Sanitation and Hygiene (4.14)*** **Equals 'No [2]'**

4.16 Did you find the promotion helpful

Did you find the promotion helpful?

Expects a single option response (**required**)

- ☐ **Yes** [1]
- ☐ **No** [2]

Prerequisites
Skip when ***Promotion on Water Sanitation and Hygiene (4.14)*** **Equals 'No [2]'**

4.17 Did promotion change your behaviour

Did the promotion change your behaviour

Expects a single option response (**required**)

- ☐ **Yes** [1]
- ☐ **No** [2]

4.18 Water treatment method you know

Which drinking water treatment method do you know? [multiple choices possible]

Expects multiple selected options (**required**)

- ☐ **Boiling** [1]
- ☐ **Chlorination (Aquatabs, Waterguard)** [2]
- ☐ **Coagulation/ chlorination (PUR)** [3]
- ☐ **Filtration with a cloth** [4]
- ☐ **SODIS** [5]
- ☐ **Filter** [6]
- ☐ **None** [7]

4.19 Method used to treat water

What kind of method do you use to treat the water? [multiple choices possible]

Expects multiple selected options (**required**)

- ☐ **Boiling** [1]
- ☐ **Chlorination (Aquatabs, Waterguard)** [2]
- ☐ **Coagulation/ chlorination (PUR)** [3]
- ☐ **Filtration with a cloth** [4]
- ☐ **SODIS** [5]
- ☐ **Filter** [6]
- ☐ **None** [7]

Prerequisites
Skip when ***Method used to treat water (4.19)*** **Excludes 'Boiling [1]'**

4.20 Boiling method

How often do you use the boiling method?

Expects a single option response (**required**)

- ☐ **Always** [1]
- ☐ **Often** [2]
- ☐ **Sometimes** [3]
- ☐ **Seldom** [4]
- ☐ **Never** [5]

Prerequisites
Skip when ***Method used to treat water (4.19)*** **Excludes 'Chlorination (Aquatabs, Waterguard) [2]'**

4.21 Chlorination method

How often do you use the chlorination method?

Expects a single option response (**required**)

- ☐ **Always** [1]
- ☐ **Often** [2]
- ☐ **Sometimes** [3]
- ☐ **Seldom** [4]
- ☐ **Never** [5]

Prerequisites
Skip when ***Method used to treat water (4.19)*** **Excludes 'Coagulation/ chlorination (PUR) [3]'**

4.22 Coagulation chlorination method

How often do you use the coagulation/ chlorination method?

Expects a single option response (**required**)

- ☐ **Always** [1]
- ☐ **Often** [2]
- ☐ **Sometimes** [3]
- ☐ **Seldom** [4]
- ☐ **Never** [5]

Prerequisites
Skip when ***Method used to treat water (4.19)*** **Excludes 'Filtration with a cloth [4]'**

4.23 Filtration with a cloth method

How often do you use the filtration with a cloth method?

Expects a single option response (**required**)

- ☐ Always [1]
- ☐ Often [2]
- ☐ Sometimes [3]
- ☐ Seldom [4]
- ☐ Never [5]

Prerequisites
Skip when ***Method used to treat water (4.19)*** **Excludes 'SODIS [5]'**

4.24 SODIS method

How often do you use the SODIS method?

Expects a single option response (**required**)

- ☐ Always [1]
- ☐ Often [2]
- ☐ Sometimes [3]
- ☐ Seldom [4]
- ☐ Never [5]

Prerequisites
Skip when ***Method used to treat water (4.19)*** **Excludes 'Filter [6]'**

4.25 Filter method

How often do you use the filter method?

Expects a single option response (**required**)

- ☐ Always [1]
- ☐ Often [2]
- ☐ Sometimes [3]
- ☐ Seldom [4]
- ☐ Never [5]

4.26 System used the most

Which system do you use the most?

Expects a single option response (**required**)

- ☐ Boiling [1]
- ☐ Chlorination (Aquatabs, Waterguard) [2]
- ☐ Coagulation/ chlorination (PUR) [3]
- ☐ Filtration with a cloth [4]
- ☐ SODIS [5]
- ☐ Filter [6]
- ☐ None [7]

4.27 Show system used

Can you show me the system that you are using the most? (only one option)

Expects a single option response (**required**)

- ☐ Filter is available and used [1]
- ☐ Filter is available and dry [2]
- ☐ Chlorine solution (Waterguard, Aquatabs) is available [3]
- ☐ PUR is available [4]
- ☐ Filter cloth is available [5]
- ☐ SODIS bottles are exposed [6]
- ☐ SODIS bottles are available in the house [7]
- ☐ System is not visible (boiling) [8]
- ☐ None [9]

4.28 Do you like method used most

Do you like the system/method that you are using the most?

Expects a single option response (**required**)

- ☐ I dislike it very much [1]
- ☐ I dislike it [2]
- ☐ I neither dislike nor like it [3]
- ☐ I like it [4]
- ☐ I like it very much [5]

4.29 System you like to use

Which system do you like to use? [multiple choices possible]

Expects multiple selected options (**required**)

- ☐ Boiling [1]
- ☐ Chlorination (Aquatabs, Waterguard) [2]
- ☐ Coagulation/ chlorination (PUR) [3]
- ☐ Filtration with a cloth [4]
- ☐ SODIS [5]
- ☐ Filter [6]
- ☐ None [7]

Prerequisites
Skip when ***System you like to use (4.29)*** **Excludes 'Boiling [1]'**

4.30 Reasons - boiling

Why do you like to use the boiling method? [multiple choices possible]

Expects multiple selected options (**required**)

- ☐ Cheap [1]
- ☐ Easy to use [2]
- ☐ Durable [3]
- ☐ Water tastes good [4]
- ☐ Product looks attractive [5]
- ☐ Safe water is treated quickly [6]
- ☐ No recurring costs [7]
- ☐ Kills germs [8]

Prerequisites
Skip when ***System you like to use (4.29)*** **Excludes 'Chlorination (Aquatabs, Waterguard) [2]'**

4.31 Reasons - chlorination (Waterguard Aquatabs)

Why do you like to use the chlorination (Waterguard, Aquatabs) method? [multiple choices possible]

Expects multiple selected options (**required**)

- ☐ Cheap [1]
- ☐ Easy to use [2]
- ☐ Durable [3]
- ☐ Water tastes good [4]
- ☐ Product looks attractive [5]
- ☐ Safe water is treated quickly [6]
- ☐ No recurring costs [7]
- ☐ Kills germs [8]

Prerequisites
Skip when ***System you like to use (4.29)*** **Excludes 'Coagulation/ chlorination (PUR) [3]'**

4.32 Reasons - coagulation chlorination (PUR)

Why do you like to use the coagulation/ chlorination (PUR) method? [multiple choices possible]

Expects multiple selected options (**required**)

- ☐ Cheap [1]
- ☐ Easy to use [2]
- ☐ Durable [3]
- ☐ Water tastes good [4]
- ☐ Product looks attractive [5]
- ☐ Safe water is treated quickly [6]
- ☐ No recurring costs [7]
- ☐ Kills germs [8]

Prerequisites
Skip when ***System you like to use (4.29)*** **Excludes 'Filtration with a cloth [4]'**

4.33 Reasons - Filtration with a cloth

Why do you like to use the filtration with a cloth method? [multiple choices possible]

Expects multiple selected options (**required**)

- ☐ Cheap [1]
- ☐ Easy to use [2]
- ☐ Durable [3]
- ☐ Water tastes good [4]
- ☐ Product looks attractive [5]
- ☐ Safe water is treated quickly [6]
- ☐ No recurring costs [7]
- ☐ Kills germs [8]

Prerequisites
Skip when ***System you like to use (4.29)*** **Excludes 'SODIS [5]'**

4.34 Reasons - SODIS

Why do you like to use the SODIS method? [multiple choices possible]

Expects multiple selected options (**required**)

- ☐ Cheap [1]
- ☐ Easy to use [2]
- ☐ Durable [3]
- ☐ Water tastes good [4]
- ☐ Product looks attractive [5]
- ☐ Safe water is treated quickly [6]
- ☐ No recurring costs [7]
- ☐ Kills germs [8]

Prerequisites
Skip when ***System you like to use (4.29)*** **Excludes 'Filter [6]'**

4.35 Reasons - filter

Why do you like to use the filter method? [multiple choices possible]

Expects multiple selected options (**required**)

- ☐ Cheap [1]
- ☐ Easy to use [2]
- ☐ Durable [3]
- ☐ Water tastes good [4]
- ☐ Product looks attractive [5]
- ☐ Safe water is treated quickly [6]
- ☐ No recurring costs [7]
- ☐ Kills germs [8]

Prerequisites
Skip when ***System you like to use (4.29)*** **Excludes 'None [7]'**

4.36 Reasons - None

Why don't you like to use any of the methods? [multiple choices possible]

Expects multiple selected options (**required**)

- ☐ Cost [1]
- ☐ Not available in the area [2]
- ☐ Water is already safe [3]
- ☐ Like the water as it is [4]

4.37 System you do not like to use

Which system do you not like to use? [multiple choices possible]

Expects multiple selected options (**required**)

- ☐ Boiling [1]
- ☐ Chlorination (Aquatabs, Waterguard) [2]
- ☐ Coagulation/ chlorination (PUR) [3]
- ☐ Filtration with a cloth [4]
- ☐ SODIS [5]
- ☐ Filter [6]

Prerequisites
Skip when *System you do not like to use (4.37)* Excludes 'Boiling [1]'

4.38 Not liked - boiling

Why don't you like to use the boiling method? [multiple choices possible]

Expects multiple selected options (**required**)

- [ ] Expensive [1]
- [ ] Difficult to use [2]
- [ ] Not durable [3]
- [ ] Water tastes bad [4]
- [ ] Product is not attractive [5]
- [ ] Takes too much time to treat [6]
- [ ] Recurring costs too high [7]
- [ ] Does not kills germs [8]

Prerequisites
Skip when *System you do not like to use (4.37)* Excludes 'Chlorination (Aquatabs, Waterguard) [2]'

4.39 Not liked - Chlorination - Waterguard Aquatabs

Why don't you like to use the chlorination (Waterguard, Aquatabs) method? [multiple choices possible]

Expects multiple selected options (**required**)

- [ ] Expensive [1]
- [ ] Difficult to use [2]
- [ ] Not durable [3]
- [ ] Water tastes bad [4]
- [ ] Product is not attractive [5]
- [ ] Takes too much time to treat [6]
- [ ] Recurring costs too high [7]
- [ ] Does not kills germs [8]

Prerequisites
Skip when *System you do not like to use (4.37)* Excludes 'Coagulation/ chlorination (PUR) [3]'

4.40 Not liked - coagulation chlorination PUR

Why don't you like to use the coagulation/chlorination (PUR) method? [multiple choices possible]

Expects multiple selected options (**required**)

- [ ] Expensive [1]
- [ ] Difficult to use [2]
- [ ] Not durable [3]
- [ ] Water tastes bad [4]
- [ ] Product is not attractive [5]
- [ ] Takes too much time to treat [6]
- [ ] Recurring costs too high [7]
- [ ] Does not kills germs [8]

Prerequisites
Skip when *System you do not like to use (4.37)* Excludes 'Filtration with a cloth [4]'

4.41 Not liked - filtration with a cloth

Why don't you like to use the method of filtration with a cloth? [multiple choices possible]

Expects multiple selected options (**required**)

- [ ] Expensive [1]
- [ ] Difficult to use [2]
- [ ] Not durable [3]
- [ ] Water tastes bad [4]
- [ ] Product is not attractive [5]
- [ ] Takes too much time to treat [6]
- [ ] Recurring costs too high [7]
- [ ] Does not kills germs [8]

Prerequisites
Skip when *System you do not like to use (4.37)* Excludes 'SODIS [5]'

4.42 Not liked - SODIS

Why don't you like to use the SODIS method? [multiple choices possible]

Expects multiple selected options (**required**)

- [ ] Expensive [1]
- [ ] Difficult to use [2]
- [ ] Not durable [3]
- [ ] Water tastes bad [4]
- [ ] Product is not attractive [5]
- [ ] Takes too much time to treat [6]
- [ ] Recurring costs too high [7]
- [ ] Does not kills germs [8]

Prerequisites
Skip when *System you do not like to use (4.37)* Excludes 'Filter [6]'

4.43 Not liked - filter

Why don't you like to use the filter method? [multiple choices possible]

Expects multiple selected options (**required**)

- [ ] Expensive [1]
- [ ] Difficult to use [2]
- [ ] Not durable [3]
- [ ] Water tastes bad [4]
- [ ] Product is not attractive [5]
- [ ] Takes too much time to treat [6]
- [ ] Recurring costs too high [7]
- [ ] Does not kills germs [8]

4.44 Importance of treating your drinking water

Do you think it is important to treat your drinking water?

Expects a single option response (**required**)

- [ ] Not important at all [1]
- [ ] Not very important [2]
- [ ] Does not matter [3]
- [ ] A bit important [4]
- [ ] Very important [5]

4.45 Neighbours using drinking water treatment method

How many of your neighbours are using a drinking water treatment method?

Expects a single option response (optional)

- [ ] (Almost) nobody (0 percent) [1]
- [ ] Some of them (25 percent) [2]
- [ ] Half of them (50 percent) [3]
- [ ] Most of them (75 percent) [4]
- [ ] (Almost) all (100 percent) [5]

4.46 Drinking water storage

Where do you store your drinking water?

Expects multiple selected options (**required**)

- [ ] PET bottles1 [1]
- [ ] 5l jerrycan [2]
- [ ] 10l jerrycan [3]
- [ ] 20l jerrycan [4]
- [ ] 50 - 100l jerrycan [5]
- [ ] Storage tank bigger than 100l [6]
- [ ] Clay containers [7]
- [ ] Other containers [8]
- [ ] None [9]

4.47 Water storage container cleaning

Do you clean the water storage containers?

Expects a single option response (**required**)

- [ ] Never [1]
- [ ] Once a month [2]
- [ ] Once a week [3]
- [ ] Daily [4]

4.48 How you clean water storage containers

How do you clean the water storage containers?

Expects a single option response (**required**)

- [ ] Rinse with water [1]
- [ ] Rinse with water and soap [2]
- [ ] Disinfect with chlorine [3]
- [ ] Do not clean the water storage containers [4]

4.49 Is untreated water good or bad for your health

Do you think that consuming untreated water is good or bad for your health?

Expects a single option response (**required**)

- [ ] Very bad [1]
- [ ] Bad [2]
- [ ] Quite bad [3]
- [ ] Neither good nor bad [4]
- [ ] Quite good [5]
- [ ] Good [6]
- [ ] Very good [7]

4.50 Impacts of untreated drinking water

What impacts can untreated drinking water have? [multiple choices possible]

Expects multiple selected options (**required**)

- [ ] None [1]
- [ ] Typhoid [2]
- [ ] Diarrhoea [3]
- [ ] Malaria [4]
- [ ] Cholera [5]
- [ ] Head ache [6]
- [ ] Worms [7]
- [ ] Diseases (germs) [8]
- [ ] Amoeba [9]
- [ ] Skin diseases [10]

4.51 Sanitation facility used

What kind of sanitation facility do you use?

Expects a single option response (**required**)

- [ ] Own VIP latrine [1]
- [ ] Shared VIP latrine [2]
- [ ] Using the bushes [3]
- [ ] Own pit latrine [4]
- [ ] Shared pit latrine [5]

4.52 When do you wash your hands

When do you wash your hands? [multiple choices possible]

Expects multiple selected options (**required**)

- [ ] Never [1]
- [ ] Before preparing the meal [2]
- [ ] After toilet [3]
- [ ] Before eating [4]
- [ ] After eating [5]
- [ ] Whenever they are dirty [6]

Section 5. Current purchasing behaviour of households

5.1 Where you buy or get your chlorine products

Where do you buy or get your chlorine products?

Expects multiple selected options (**required**)

- [ ] At the market [1]
- [ ] From an NGO [2]
- [ ] Pharmacy [3]
- [ ] Water kiosk [4]
- [ ] Community based organisation, which come door to door or have a community mobilisation [5]
- [ ] Supermarket [6]
- [ ] Small shops/ kiosk [7]
- [ ] From a microfinance institute [8]
- [ ] Do not have any [9]
- [ ] Others [10]

Prerequisites
Skip when ***Where you buy or get your chlorine products (5.1)*** **Excludes 'Others [10]'**

5.2 Where you get your chlorine products - Other

Please specify:

Expects a single line text response (**required**)

5.3 Where you buy or get your filter products

Where did you buy your filter?

Expects multiple selected options (**required**)

- [ ] At the market [1]
- [ ] From an NGO [2]
- [ ] Pharmacy [3]
- [ ] Householdware shop [4]
- [ ] Water kiosk [5]
- [ ] Community based organisation, which come door to door or have a community mobilisation [6]
- [ ] Supermarket [7]
- [ ] Small shops/ kiosk [8]
- [ ] From a microfinance institute [9]
- [ ] Do not have one [10]
- [ ] Others [11]

Prerequisites
Skip when ***Where you buy or get your filter products (5.3)*** **Excludes 'Others [11]'**

5.4 Where you get your filter - Other

Please specify:

Expects a single line text response (**required**)

5.5 Where you buy or get your SODIS bottles

Where did you buy or get your SODIS bottles?

Expects multiple selected options (**required**)

- [ ] At the market [1]
- [ ] From an NGO [2]
- [ ] Pharmacy [3]
- [ ] Householdware shop [4]
- [ ] Water kiosk [5]
- [ ] Community based organisation, which come door to door or have a community mobilisation [6]
- [ ] Supermarket [7]
- [ ] Small shops/ kiosk [8]
- [ ] From a microfinance institute [9]
- [ ] Do not have any [10]
- [ ] Others [11]

Prerequisites
Skip when ***Where you buy or get your SODIS bottles (5.5)*** **Excludes 'Others [11]'**

5.6 Where you get your SODIS bottles - Other

Please specify:

Expects a single line text response (**required**)

5.7 Where you get water treatment products

Where would you prefer to buy water treatment products? [multiple choice]

Expects multiple selected options (**required**)

- [ ] At the market [1]
- [ ] From an NGO [2]
- [ ] Pharmacy [3]
- [ ] Householdware shop [4]
- [ ] Water kiosk [5]
- [ ] Community based organisation, which come door to door or have a community mobilisation [6]
- [ ] Supermarket [7]
- [ ] Small shops/ kiosk [8]
- [ ] From a microfinance institute [9]
- [ ] Others [10]

Prerequisites
Skip when ***Where you get water treatment products (5.7)*** **Excludes 'Others [10]'**

5.8 Where you get water treatment products - Other

Please specify:

Expects a single line text response (**required**)

5.9 Who decides - household goods up to 500 KSH

Who in your family decides about buying household goods up to 500 KSH?

Expects a single option response (**required**)

- [ ] Husband [1]
- [ ] Wife [2]
- [ ] Both [3]
- [ ] Eldest person in the household [4]
- [ ] Other [5]

5.10 Who decides - household goods over 500 KSH

Who in your family decides about buying household goods of over 500 KSH?

Expects a single option response (**required**)

- [ ] Husband [1]
- [ ] Wife [2]
- [ ] Both [3]
- [ ] Eldest person in the household [4]
- [ ] Other [5]

5.11 Who decides - food

Who in your family decides about buying food?

Expects a single option response (**required**)

- [ ] Husband [1]
- [ ] Wife [2]
- [ ] Both [3]
- [ ] Eldest person in the household [4]
- [ ] Other [5]

5.12 Who decides - electronic goods

Who in your family decides about buying electronic goods?

Expects a single option response (**required**)

- [ ] Husband [1]
- [ ] Wife [2]
- [ ] Both [3]
- [ ] Eldest person in the household [4]
- [ ] Other [5]

5.13 Who decides - childrens education

Who in your family decides about children's education?

Expects a single option response (**required**)

- [ ] Husband [1]
- [ ] Wife [2]
- [ ] Both [3]
- [ ] Eldest person in the household [4]
- [ ] Other [5]
- [ ] We do not have children/ children are not of school age yet [6]

5.14 Who decides - water

Who in your family is responsible for having water in your house?

Expects a single option response (**required**)

- [ ] Husband [1]
- [ ] Wife [2]
- [ ] Both [3]
- [ ] Eldest person in the household [4]
- [ ] Other [5]

5.15 Who decides - drinking water treatment methods

Who in your family decides about buying drinking water treatment methods?

Expects a single option response (**required**)

- [ ] Husband [1]
- [ ] Wife [2]
- [ ] Both [3]
- [ ] Eldest person in the household [4]
- [ ] Other [5]

5.16 Monthly expenditure

How much is your monthly expenditure?

Expects a single option response (optional)

- [ ] under 2'999 KSH [1]
- [ ] 3'000-3'999 KSH [2]
- [ ] 4'000-4'999 KSH [3]
- [ ] 5'000-5'999 KSH [4]
- [ ] 6'000-6'999 KSH [5]
- [ ] 7'000-7'999 KSH [6]
- [ ] 8'000 KSH and more [7]

5.17 Monthly income

How much is your monthly income?

Expects a single option response (optional)

- [ ] under 2'999 KSH [1]
- [ ] 3'000-3'999 KSH [2]
- [ ] 4'000-4'999 KSH [3]
- [ ] 5'000-5'999 KSH [4]
- [ ] 6'000-6'999 KSH [5]
- [ ] 7'000-7'999 KSH [6]
- [ ] 8'000 KSH and more [7]

5.18 Money family has available per week

How much money does your family have available to spend per week?

Expects a single option response (optional)

- [ ] 100-500 [1]
- [ ] 500-1'000 [2]
- [ ] 1'000-1'500 [3]
- [ ] 1'500-2'000 [4]
- [ ] 2'000-2'500 [5]
- [ ] more than 2'500 KSH [6]

5.19 What would you buy with 2000 KSH

What would you buy if you would have 2'000 KSH available?

Expects multiple selected options (optional)

- [ ] Radio [1]
- [ ] Chicken [2]
- [ ] Mobile [3]
- [ ] Water filter [4]
- [ ] Goat [5]
- [ ] Food [6]
- [ ] Cloth [7]
- [ ] School fees [8]
- [ ] Start own business [9]
- [ ] Invest the money [10]
- [ ] Buy household goods [11]

5.20 Per month - Chlorine Aquatabs Waterguard

How much are you paying per months for chlorine (Aquatabs, Waterguard)?

Expects a single option response (**required**)

- [ ] 0 KSH [0]
- [ ] 1-49 KSH [1]
- [ ] 50-99 KSH [2]
- [ ] 100-149 KSH [3]
- [ ] 150-199 KSH [4]
- [ ] 200-249 KSH [5]
- [ ] 250-299 KSH [6]
- [ ] 300-349 KSH [7]
- [ ] 350 KSH and more [8]

5.21 Per month - SODIS

How much are you paying per months for SODIS?

Expects a single option response (**required**)

- [ ] 0 KSH [0]
- [ ] 1-49 KSH [1]
- [ ] 50-99 KSH [2]
- [ ] 100-149 KSH [3]
- [ ] 150-199 KSH [4]
- [ ] 200-249 KSH [5]
- [ ] 250-299 KSH [6]
- [ ] 300-349 KSH [7]
- [ ] 350 KSH and more [8]

5.22 Would per month - Chlorine Aquatabs Waterguard

What would you be willing to pay for chlorine (Aquatabs, Waterguard)?

Expects a single option response (**required**)

- [ ] 0-49 KSH [1]
- [ ] 50-99 KSH [2]
- [ ] 100-149 KSH [3]
- [ ] 150-199 KSH [4]
- [ ] 200-249 KSH [5]
- [ ] 250-299 KSH [6]
- [ ] 300-349 KSH [7]
- [ ] 350 KSH and more [8]

5.23 Would per month - coagulation chlorination (PUR)

What would you be willing to pay for coagulation/chlorination (PUR)?

Expects a single option response (**required**)

- [ ] 0-49 KSH [1]
- [ ] 50-99 KSH [2]
- [ ] 100-149 KSH [3]
- [ ] 150-199 KSH [4]
- [ ] 200-249 KSH [5]
- [ ] 250-299 KSH [6]
- [ ] 300-349 KSH [7]
- [ ] 350 KSH and more [8]

5.24 Would per month - SODIS

What would you be willing to pay for SODIS?

Expects a single option response (**required**)

- [ ] 0-49 KSH [1]
- [ ] 50-99 KSH [2]
- [ ] 100-149 KSH [3]
- [ ] 150-199 KSH [4]
- [ ] 200-249 KSH [5]
- [ ] 250-299 KSH [6]
- [ ] 300-349 KSH [7]
- [ ] 350 KSH and more [8]

5.25 Did you buy a ceramic filter

Did you buy a ceramic filter?

Expects a single option response (**required**)

- [ ] Yes [1]
- [ ] No [2]

Prerequisites
Skip when ***Did you buy a ceramic filter (5.25)*** **Equals 'No [2]'**

5.26 How much did you pay for the ceramic filter

How much did you pay for the ceramic filter?

Expects a single option response (**required**)

- [ ] 1'600 KSH [1]
- [ ] 1'500 KSH [2]
- [ ] 850 KSH [3]
- [ ] Other [4]

Prerequisites
Skip when ***How much did you pay for the ceramic filter (5.26)*** **Not Equal 'Other [4]'**

5.27 How you paid for the ceramic filter - Other

Please specify:

Expects a numeric response (**required**)

5.28 What would you be willing to pay for a ceramic filter

What would you be willing to pay for a ceramic filter?

Expects a single option response (**required**)

- [ ] 0-499 KSH [1]
- [ ] 500-999 KSH [2]
- [ ] 1'000-1'499 KSH [3]
- [ ] 1'500-1'999 KSH [4]
- [ ] 2'000-2'499 KSH [5]
- [ ] 2'500-2'999 KSH [6]
- [ ] 3'000-3'499 KSH [7]
- [ ] 3'500 KSH and more [8]

5.29 How much you paid for treatment of last case of diarrhoea

How much did you pay for the treatment of the last case of diarrhoea?

Expects a single option response (**required**)

- [ ] Less than 99 KSH [1]
- [ ] 100-499 KSH [2]
- [ ] 500-999 KSH [3]
- [ ] 1'000-1'499 KSH [4]
- [ ] 1'500-1'999 KSH [5]
- [ ] 2'000-2'499 KSH [6]
- [ ] 2'500 KSH and more [7]
- [ ] No treatment paid [8]

Section 6. Wealth index

6.1 Items owned

Does anyone from your household own any of these items (are functioning)? [Say the answers, multiple choices possible]

Expects multiple selected options (optional)

- [ ] Electricity [1]
- [ ] Radio [2]
- [ ] TV [3]
- [ ] Mobile phone [4]
- [ ] Bicycle [5]
- [ ] Motorbike [6]
- [ ] Car [7]
- [ ] Fridge [8]
- [ ] Watch [9]

6.2 Animals owned

Do you own any of these animals? (multiple choices possible)

Expects multiple selected options (optional)

- [ ] Cows [1]
- [ ] Donkeys [2]
- [ ] Sheep [3]
- [ ] Goats [4]
- [ ] Chickens [5]
- [ ] Pigs [6]
- [ ] Rabits [7]
- [ ] None (No animals) [8]

Branches
If response **Includes 'None (No animals) [8]'** then skip to ***Fuel used the most for cooking (6.10)***

Prerequisites
Skip when ***Animals owned (6.2)*** **Excludes 'Cows [1]'**

6.3 How many cows do you have

How many cows do you have?

Expects a numeric response (optional)

Constraints
Response must be ***Greater Than or Equal '0'***

Prerequisites
Skip when ***Animals owned (6.2)*** **Excludes 'Donkeys [2]'**

6.4 How many donkeys do you have

How many donkeys do you have?

Expects a numeric response (optional)

Constraints
Response must be ***Greater Than or Equal '0'***

Prerequisites
Skip when *Animals owned (6.2)* Excludes 'Sheep [3]'

6.5 How many sheep do you have

How many sheep do you have?

Expects a numeric response (optional)

Constraints

Response must be ***Greater Than or Equal '0'***

Prerequisites
Skip when *Animals owned (6.2)* Excludes 'Goats [4]'

6.6 How many goats do you have

How many goats do you have?

Expects a numeric response (optional)

Constraints

Response must be ***Greater Than or Equal '0'***

Prerequisites
Skip when *Animals owned (6.2)* Excludes 'Chickens [5]'

6.7 How many chickens do you have

How many chickens do you have?

Expects a numeric response (optional)

Constraints

Response must be ***Greater Than or Equal '0'***

Prerequisites
Skip when *Animals owned (6.2)* Excludes 'Pigs [6]'

6.8 How many pigs do you have

How many pigs do you have?

Expects a numeric response (optional)

Constraints

Response must be ***Greater Than or Equal '0'***

Prerequisites
Skip when *Animals owned (6.2)* Excludes 'Rabits [7]'

6.9 How many rabbits do you have

How many rabbits do you have?

Expects a numeric response (optional)

Constraints

Response must be ***Greater Than or Equal '0'***

6.10 Fuel used the most for cooking

What kind of fuel do you use the most for cooking?

Expects a single option response (**required**)

- ☐ Charcoal with improved stove [1]
- ☐ Charcoal with unimproved stove [2]
- ☐ Wood with improved stove [3]
- ☐ Wood with unimproved stove [4]
- ☐ Kerosene [5]
- ☐ Gas [6]
- ☐ Electricity [7]

6.11 Own or rent the house you live in

Do you own or rent the house you are living in?

Expects a single option response (optional)

- ☐ Owning [1]
- ☐ Renting [2]

6.12 Observations by interviewer

Interviewer, please answer the following questions based on your observations.

6.13 Walls of the main house

What type of walls does the main house have?

Expects a single option response (**required**)

- ☐ Cement/ concrete [1]
- ☐ Wood planks [2]
- ☐ Corrugated iron [3]
- ☐ Mud [4]
- ☐ Stone [5]

6.14 Type of floor

What type of floor is it?

Expects a single option response (**required**)

- ☐ Cement/concrete [1]
- ☐ Floor plates [2]
- ☐ Earth [3]
- ☐ Dung [4]

6.15 Type of roof

What type of roof is it?

Expects a single option response (**required**)

- ☐ Thatch, straw [1]
- ☐ Bricks [2]
- ☐ Corrugated iron [3]

6.16 Rooms the main house has

How many rooms does the main house have?

Expects a single option response (**required**)

- ☐ One [1]
- ☐ Two [2]
- ☐ Three [3]
- ☐ Four [4]
- ☐ Five or more [5]

Section 7. End

7.1 End

You've reached the end of the questionnaire. Please press Back to review your responses, or press Next to submit the survey.

Evaluation of distribution models for household water treatment products in Kenya

Regula Meierhofer, Carina Flückiger, Rick Johnston, Heiko Gebauer
Eawag: Swiss Federal Institute of Aquatic Science and Technology
contact: regula.meierhofer@eawag.ch

Background

Global efforts to scale up the promotion of household water treatment as well as establishing sustainable water treatment practices have been difficult. This can be attributed to challenges particular to the market at the base of the pyramid such as lack of awareness on the importance of treating drinking water, lack of access to products, particularly in rural areas, lack of a broader choice of suitable products and difficulties to establish sustainable supply chains.
The marketing of ceramic filters has been challenging since the BOP markets are largely dominated by fast-moving consumer goods and previous marketing trials with filters revealed that successful marketing is among other factors linked with the provision of microcredits.
Between January 2012 and April 2013 marketing trials for ceramic water filters and other HWTS products were carried out in Kenya and Bolivia to assess the influence of the different stakeholders responsible for community education and operation of distribution and retail sales on product sale and willingness to pay for ceramic filters.

Method

Four different project sites were chosen for the marketing trial in Kenya. The sites were selected based on sufficient water supply from surface sources, keeping enough distance between the sites to avoid cross-flow of information, interest for partnership from the District Public Health and Sanitation office as well as community leaders and no previous distribution of free products for household water treatment had taken place.

- In site 1, the community education was done through the NGO's promoters, while the sale of products was done through a water supply utility and local entrepreneurs (Munyu in Thika District).
- In site 2 the community education and product sale were done through community health workers of the official public health system (Thuthua in Thika District).
- In site 3, community groups were trained and motivated to do community education as well as product sale (Mwala District).
- In site 4, the communication as well as the sale of products was done through the promoters of an NGO (Mwala District).

In each site 300 households received trainings through household visits and community group training events. These households were surveyed at baseline and after about 11 months of marketing the products. Quantitative questionnaires were used to collect information from households, while sales staff gathered qualitative information and records of sales.

Description of intervention sites

In Kenya, intervention sites were selected in Munyu and Thuthua area in Thika East District. Most people in this area get their water from the turbid river. In Mwala District, Yathui and Mutheteni were chosen as intervention sites. Also in Mwala, most households get their water from surface sources.
Villages around Mutheteni in Mwala District get their drinking water by scooping sand from the riverbed of Nthwake river.
The sites in chosen in Mwala District are less accessible and have a higher imployment rate in Agriculture than in Thika.

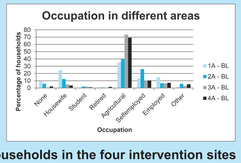


Fig 1: Occupation of households in the four intervention sites

Establishment of the supply chain for products

At the start of the intervention, a bulk delivery of 200 ceramic filters was made from Kenya Ceramic Project to Thika for a whole sale price of 1300 KSH (15 USD) per filter (ex-factory price of 1100 KSH (12.7 USD) plus transport from Kitale to Thika). From Thika, 40 filters were transported to the project area in Mwala, where to wholesale price mounted up to 1350 KSH (15.6 USD). The retail price of filters was 1500 KSH (17.3 USD) in Thika and initially 1600 KSH (18.4 USD) in Mwala (later reduced to a subsidized price of 850 KSH). The project provided KCP a financial guarantee. Wholesalers however made the payments for the filters directly to KCP after product sale. At the retail level, individual customers were able to pay for their filters in installments. Filters were handed out once the full payment was received.
For the supply of Chlorine products, a collaboration was established with PSI, who directly supplied the Chlorine products to the wholesalers. The wholesale price for a 150ml bottle of Waterguard was 16.5 KSH, a pack of 20 tablets of Aquatabs 42 KSH and a PUR sachet 4.22 KSH.

Area 1: (Thika) Promotion NGO, Sale water utility & local entrepreneurs

Description of the Intervention

Community education through the promoter through household visits, together with information dissemination during community meetings and other social gatherings.

Retail distribution and sale of HWTS products through the operating committee of the community water project (CWP) in Munyu. The CWP is a financially self-sustainable group, managing the piped water supply scheme in the area, which is distributed without prior treatment. The CWP sold filters to their existing network of customers. Payment in installments for filters was possible, the payment rates were added to the water bill.
Filters in Munyu were sold for 1'500 KSH. CWP obtained a profit margin of 200 KSH from the sale of one filter.
In addition to CWP, two shop owners were selling HWTS products,

Qualitative Results

The committee of the community water project (CWP) sold 51 filters for a price of 16.5 USD.
2 local shops in the project area sold 4 filters.

Selling filters through a community based enterprise already providing piped water in combination with community education through a promoter was the most successful intervention.
CWP however received several complaints from customers that they should provide safe water instead of only collected river water, distributing it untreated to the households and selling household water filters to the household who consume the water they provide.
CWP enabled payment in instalments to their customers.

In area 1, in addition to CWP several retail shops sold chlorination products, mainly water guard and also took up the sale of ceramic filters. However the sale of the relatively expensive ceramic filters through these kiosks has been challenging due to space limitations and the difficulty to collect payment in installments. A lack of customers trust into the kiosk owners prevented them to pay their filters in installments to the kiosks (filters were handed out after the full payment for the filter was received). The kiosks are more suitable to sell small items such as Waterguard and PUR.

Area 2: (Thika) Promotion & Sale Community Health Workers

Description of the Intervention

Community education and sale of ceramic filters through community health workers of the Community Health Unit in partnership with the Public Health Officer. The promotion approach included community meetings and household visits. The community health workers visited households mainly over the weekend. Training and supervision of CHW's through the NGO.

Ceramic filters were supplied on credit for 1'300 KSH per piece to the Public health office, where the CHW's could pick them up for sale. CHW's sold filters within the community for 1'500 KSH and gained a profit margin of 200 KSH. Customers paid in installements. Filters were handed out after full payment was received.

Qualitative Results

The community health workers sold 40 filters for a price of 16.5 USD

Sale and social marketing with the health centre and the community health workers (CHW) in Thika worked out well. The initiative was strongly supported by the Public health officer in Thika, who prompted to CHW's in this area to define sales targets. The group of CHW's were motived in selling water filters and interested in making profit from the sale.

However, the Community Health Workers (CHW) initially were having some difficulties to manage the finances. As they sold the water filters by installment payments and did not have an accountant responsible for this finance, the group had difficulties to keep records of all sales and payments after several months. After a financial management training was provided, the CHW were able to organise themselves and had a good bookkeeping of their sales.
The CHW's sold the filters at different prices. The wholesale price was 1'300 KSH and the recommended retail price 1'500 KSH. Nevertheless, some CHW chose to rise the retail price to increase their profit margin from 200 up to 300 or 400 KSH. No chlorination products were sold in this area

Area 3: (Mwala) Promotion & Sale Community based Organisation

Description of the Intervention

Community education and sale of ceramic filters and chlorine products through two community organizations, "House of drum youth group" and "Utithini organic self-help group". While "House of drum youth group" had an existing working relation with PSI prior to the start of the project as wholesaler for health products including Chlorine and had corresponding business experience, "Utithini organic self-help group" did not have previous experience with the marketing of products. Training and supervision of the CBO's through the NGO.
CBO's collected the filters after pre-payment of 1'350 KSH per filter from the NGO promoter, who had the role of a wholesaler in Mwala. The CBO sold the filters to the community members at 1'600 KSH, gaining a profit margin of 250 KSH.
At the time of the midterm evaluation, no filters were yet sold in this intervention site. The selling price therefore was lowered to a subsidized price of 850 KSH. Customers paid in installments. Filters were handed out after full payment was received.

Qualitative Results

One of the community groups sold 11 filters for a price of 10 USD and had a good sale of chlorination products
The second community groups did not sell any filter and did not have a good sale of chlorination products.

Working with Community based organisations (CBO) revealed that organizing distribution and social marketing through a community based organization might be successful, but only if the group is well organized and has sales experience.
One of the groups involved in community education and products sale: the CBO "House of Drums" was selling various PSI products before we introduced the project. During the project period the group was very successful selling smaller HWTS products and also was able to sell a number of water filters after the price was lowered from 16.5 USD to 10 USD.
The other CBO "Itithini Organic Self Help Group" did not have any sales experience and their working method was not very dynamic. Their sales skills were limited and keeping their motivation up was difficult as they were not earning and profits. "Itithini Organic Self Help Group" did not sell any filters and only a very limited amount of chlorination products.

Area 4: (Mwala) Promotion & Sale Promoter of an NGO

Description of the Intervention

The promotion and sale of ceramic filters and chlorine products initially was done through a promoter of the NGO. Promotion activities comprised household visits, community group trainings and a number of community demonstrations. However, the sale of chlorine products through a promoter had to be ceased as household were claiming to receive products for free as they were distributed through an NGO. Subsequently, four entrepreneurs were identified and established as retail distributers for Chlorine products.
Ceramic filters were directly sold by the KWAHO promoter, initially for a price of 1600 KSH (The selling price in Mwala District was higher than in Thika District to cover for the cost of transport of filters from Thika to Mwala).
At the time of midterm evaluation no filters were yet sold in this intervention site. The selling price therefore was lowered to a subsidized price of 850 KSH. Customers paid in installements. Filters were handed out after full payment was received

Qualitative Results

The NGO promoter sold 1 filter for 17.5 USD and 26 filters for 10 USD

The NGO promoter was very committed in implementing an effective community education campaign. He was able to reach all of the 300 households several times and participated in various community gatherings. However, the model of combining community education and product sale through a promoter was problematic as the households trained demanded goods for free as they perceive NGO's as charity organizations. The sales model therefore was reorganized and the sale of chlorination products handed over to local shops in the project area.

The promoter continued with the sale of ceramic filters, but only was able to sell filters after the price was lowered from 17.5 USD to 10 USD. He offered payment in instalment schemes to the customers and handed over the filters after he had received the full payments for the filters. For this scheme to be acceptable within the community, the promoter had to place much effort to build a relationship of trust within the community.

Quantitative Results

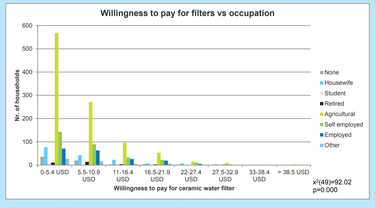


Fig 2. Willingness to pay for filters vs occupation

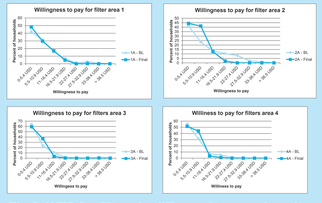


Fig 3. WTP for filters in different intervention sites

A significant regional difference between Thika District and Mwala District, which is more agriculturally oriented than Thika, was found in the willingness to pay for ceramic filters: In Mwala, only 13% of households were willing to pay more than 11 USD at baseline, and only 4% of households were willing to pay more than 11 USD after the intervention, while in Thika, 31% of households were willing to pay more than 11 USD for a ceramic filter at baseline and 18.55% of households were willing to pay more than 11 USD after the intervention.

In all regions 79% of all households were not willing to pay more than 11 USD for a ceramic filter: 51% were willing to pay up to 5.4 USD, 28.3% were willing to pay 5.5 to 10 USD.

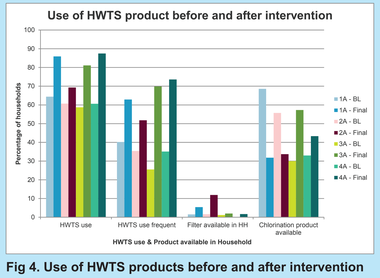


Fig 4. Use of HWTS products before and after intervention

In all areas, the use of household water treatment increased by an average of 20% from 61.4% to 81%. In site 1: 65.5% to 85.9%, in site 2: 60.75 to 69.3%, in site 3: 58.7% to 81.1% , in site 4: 60.6% to 87.5% in area 4.
A larger influence of the intervention was observed on the frequent use (defined as using the method often to always) of household water treatment it in increased from 40.2% to 62.9% in area 1, 35.4% to 51.8% in area 2, 25.5% to 69.9% in area 3, 35% to 73.6% in area 4; and from 34.6% to 65% in all areas in average.

Before the community education activities were implemented, a lower number of households in Mwala District used Chlorination to disinfect their drinking water; 30% in area 3 and 33% in area 4, compared to 68.6% of households in area 1 and 55.7% in area 2 in Thika Distict having a chlorine product available. The intervention increased the availability of chlorine in the household in Mwala District by 27.3% in area 3 and 10.3% in area 4.
In area 1 and 2 however the availability Chlorine products in the households decreased. In those areas more people said that they would be boiling and 5% of households in area 1 and 10% in area 2 switched to using a ceramic filter. Only very few ceramic filters were sold in area 3 and 4 - even after the selling price of the filters in these areas was reduced to 10 USD.

Households in all areas had the impression that a higher number of neighbours are using household water treatment. The percentage of neighbours using increased by 23.6% to 54.3% in site 1, by 23.7% to 54.5% in site 2, by 48.1% to 75% in site 3 and by 37.6% to 69.4% in site4.

Outcome variable: Frequent use of HWTS	B	S.E.	p	OR	95% C.I. for OR	
					lower	upper
Education level	.400	.123	.001	1.491	1.172	1.898
Turbidity of water	.230	.139	.098	1.258	.959	1.651
Promotion received	-2.248	.410	.000	.106	.047	.236
Information through health center	-.368	.227	.106	.692	.443	1.081
Information through CBO	.132	.196	.501	1.141	.777	1.677
Information through Promoter	.144	.207	.486	1.155	.769	1.735
Information through Shop owner	-.263	.351	.454	.769	.386	1.530
Information through Com. Health Worker	-.260	.223	.242	.771	.498	1.193
Information through Com. Meeting	.910	.467	.051	2.485	.996	6.202
Information through Demo in town	1.254	1.305	.337	3.504	.272	45.224
Information through TV, Radio, Newspaper	-1.288	.363	.000	.276	.135	.562
Into through other	-1.780	1.019	.081	.169	.023	1.244
Did promotion change behaviour	-1.798	.306	.000	.166	.091	.302
Like the method used for treatment	.717	.076	.000	2.049	1.764	2.380
Importance of treating the water	.537	.099	.000	1.711	1.410	2.077
Percentage of neighbours using HWTS	.671	.072	.000	1.957	1.699	2.254
Untreated water good or bad for health	.074	.046	.109	1.077	.984	1.179
Handwashing index	.261	.054	.000	1.298	1.167	1.444
Money available per week	.000	.000	.202	1.000	1.000	1.001
WTP for ceramic filters	.163	.092	.078	1.177	.982	1.411
Constant	-3.872	1.043	.000	.021		

R^2=0.294 (Cox and Snell), R^2=0.406 (Nagelkerke), Model $x^2(20)$=585.480

Tab 1. Logistic regression: Frequent use of HWTS after project intervention

Logistic regression with frequent use of HWTS after project intervention as outcome variable revealed that mainly factors relating to people's attitude and social norms were significantly correlated with HWTS use as well as frequent use of HWTS: if they think that it is important to treat the water, if they like the system they are using, and if a high number of neighbours are using the method. In addition, the education level, TV & Radio as information source were signifiantly correlated with frequent HWTS use.
If households received a promotion (household visit) had a significant correlation, but it was not relevant if the promotion was done through the health sector, a promoter of an NGO or a community based organization
Contrary to findings at baseline (data not shown) risk perception and money available per week were not significantly correlated with frequent HWTS use.

Conclusions

The logistic regression for frequent use of household water treatment after the intervention revealed that sociopsychological factors such as emotional attributes (if they like the system used – OR: 2.05, CI: 1.8-2.4), if they think it is important to treat the water (OR: 1.7, CI: 1.4-2.1) and social norms (how many neighbours are using household water treatment – OR: 1.9, CI: 1.7-2.3) as well as the education level (OR: 1.5, CI: 1.2-1.9) have the strongest influence on the frequency of household water treatment.
Not a significant influence on frequent use of household water treatment had the risk awareness of users (if they think that drinking water causes diarrhea or other illnesses or has no impact). Also the economic status of the household only in a single factor analysis was correlated significantly with frequent use.

Highly significant but with a smaller odds ratio of 0.104 (CI:0.05-0.2) was the fact if they received a promotion including household visits or not. A stronger effect (OR: 1.3, CI: 1.2-1.4) had the handwashing index, but the two variables are not independent since during the household visits training was provided on household water treatment as well as handwashing. Not significant was the channel used to disseminate the information, the data collected indicates that it does not make a great difference if household visits for community education are conducted by promoters of an NGO, by community health workers or by members of a community based organization.
We therefore can conclude that community education through household visits, independent of the stakeholder carrying out the activity, is an important strategy for social marketing of HWTS products. Such an activity should be complemented by disseminating information through TV & Radio (OR: 0.28, CI:0.14-0.56).

The sales experiences showed that the marketing of products requires a sales force with sales experience and an entrepreneurial spirit that involves the definition of sales targets. Community based organizations or community health workers successfully can be used for selling products, but they need to be equipped with the adequate management skills and should have the motivation to make sufficient profit through the sale of the products.
Very promising is the approach of selling products through water supply utilities. Enterprises, providing a basic service have a good predisposition to distribute higher priced products since the collection of payment in installments can be added to the water bill.

Working with groups that do not have any know-how or experiences in product marketing and sale is not recommended since the risk for failure of the distribution mechanism is high.
Using promoters of an NGO for community education as well as product sale is not recommended as on one side, promoters often lack sales skills and on the other side, customers often approach representatives of an NGO with an attitude of getting something for free, which has a negative effect on their willingness to buy a product from an NGO's promoter.
Local entrepreneurs with small kiosks have sufficient sales experience but the sale of bulky and expensive products such as water filters is a challenge due to space limitations and challenges with payment in installments schemes. Fast moving consumer goods such as chlorination products can be sold well through small kiosks.

Questions on income levels and what an individual household would buy with 20 USD showed that the majority of household would spend their money on food (data not shown). The purchase of a higher priced product for water treatment such as a ceramic filter is a challenge for households living at the base of the pyramid. In Mwala District ceramic filters were only sold after the price was lowered from 17.5 USD to 10 USD. In the whole project area only a few customers bought their filters with an upfront payment. To offer customers the opportunity to pay for a filter in installments is an important element that facilitates product sale. If filters are handed out after the full payment has been received, a relation of trust between the customer and the seller is essential to motivate customers to buy a filter through such a scheme.

contact: regula.meierhofer@eawag.ch