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# Multi-Stakeholder approach toward HWTS Awareness and Advocacy among the Bottom of Pyramid

Process Documentation: Aqua+ Service  
Delivery Model at Noida and Delhi

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# 1 Introduction

## 1.1 Background

Water is a natural resource, fundamental to life and livelihood, agriculture and sustainable development. NCR is a water scarce region, dependent to a large extent on surface water sources located outside the region. The growing population of NCR from 371 lakhs in 2001 to 460 lakhs in 2011, which is expected to reach 617 lakhs by 2021, and the consequent rising demand due to urbanization pose serious challenges for the availability of water.

UN Declaration of 2010 has recognized access to water as a Human Right. Providing safe, reliable, piped water to every household is an essential goal for all countries and civic bodies in charge of water. Despite access to drinking water having improved from 1900 to 2010, water quality remains a major issue. This lack of concern over quality of water supplied results in increased health and economic burden.

Assuring that water reaching people is safe for consumption is a challenge for Governments. However, till the time mechanisms for providing safe water to everyone 24\*7 are put in place, there is a need to promote Household Water Treatments and Safe Storage (HWTS) methods enabling access to safe drinking water for all.

Current policy mechanisms dealing with water quality is insufficient requiring more measures for facilitating access to safe drinking water for all.

According to World Bank estimates, 21% of communicable diseases in India are related to unsafe water, with around 37.7 million Indians being affected by waterborne diseases annually. It is estimated that around 1.5 million children die due to diarrhoea alone. Estimated 73 million working days are lost due to waterborne disease each year, resulting in an estimated economic burden of \$600 million a year. Poor water quality and health linkage is one of the most serious challenges requiring immediate attention.

HWTS systems provide first or extra barrier of protection to ensure drinking water quality. HWTS treats water at the point of use, preferably using effective but low-cost treatment technologies that could be developed using locally available raw materials. The most common HWTS methods include solar disinfection (SODIS), filtration, boiling and chlorination.

However Government lacks policy and regulatory mechanisms for promoting these methods. In the last one decade private sector too has ventured in this area and intensively promoted household based water filters. According to Centre for International Trade Development, water market in India is estimated to be worth more than \$ 4 billion, and growing by 10-12% annually. But the major sufferers are low income neighborhoods within whom awareness levels on water quality-health impacts is virtually absent. Low cost technologies, though effective, are not popular among them due to perceived poor taste of water, unavailability and inconvenience factors. There is a need to make poor aware regarding water quality-health impacts so that they demand access to safe drinking water.

DA has been working on water quality issues since many years. One such initiative is Awareness and Advocacy of HWTS among the Bottom of the Pyramid in India with a Focus on Delhi National Capital Region". The initiative aims to scale up promotion of safe, affordable and environmentally

appropriate options for HWTS systems and improved hygiene practice among low income neighborhoods and within the broader Government strategy.

## 1.2 Innovation: Sodium hypo chloride solution (Aqua+)

Aqua+ (Sodium hypo chloride solution) was developed by TARA, the incubator of the Development Alternatives Group, in partnership with Antenna Technologies, Switzerland. After developing and testing the business model, it was then hived off into a for-profit company called TARAlife Sustainability Solutions Pvt Ltd. (hereafter referred to as TARAlife).

The production unit of Aqua+ has been setup in Orchha, Madhya Pradesh. The current production capacity of this unit is approx. 75,000 bottles per month. The production process to manufacture Aqua+ is shown in the diagram below.

Each bottle of Aqua+ can purify 500 litres of water which for a family of 5 is sufficient for 1 month. The shelf-life of the product is 6 months from the date of manufacturing.

Aqua+

- 50ml Sodium Hypochlorite solution (liquid chlorine)
- Can treat 500 liters of water
- Shelf life of 6 months from date of manufacturing
- Clear instructions in English and Hindi

The product is very easy to use:

- Add ½ cap in 20 liters of water or 2 drops per liter
- Wait for 30 minutes
- Now water is safe to drink

A white plastic bottle with a white cap and a blue label. The label features a large blue water drop graphic and the text 'AQUA+' in white and blue. Below the English text, there is text in Hindi: 'पाँच बूंदों का चमत्कार'.

Aqua+ is affordable. It costs only till Rs 40 that is approximately Re 1 per day. Thus it is cheaper than tobacco and other discretionary expenses of BoP households. It is easy to use. Just add two drops of Aqua+ per litre of water, wait for 30 minutes and the water is safe to drink. The instructions are clearly mentioned on the bottle in English and the local language. It is aspiration since it provides households with “filter-like” water at an affordable price.

## 2 Project Description

Bacterial contamination is one of the largest problems in urban slums in India. While the quality of water supplied or sourced in these areas is suspect, secondary contamination due to unsanitary and unhygienic living conditions is a big contributor to the problem. Noida is no stranger from this problem. With increasing populations in the city, primarily in informal settings like slums, it is essential to ensure they have affordable access to safe water. DA's pilot in Noida was an attempt to provide a solution to this issue. DA helped developed an innovative approach to reach the BoP in two urban slums. A multi-level marketing model, market based business model and peer influence based model were adopted. This pilot aimed to implement a market-based, sustainable and scalable delivery model to provide access to safe drinking water for the BoP population.

The report is highlights the innovative service delivery models that were piloted under the project. The pilots are analyzed and common elements for success are culled out and presented. It also tries to understand the barriers faced on the ground and what kind of coping strategies can be applied to overcome them.

## 2.1 Project Objective

- To get safe and sustainable drinking water at different slums of Delhi and Noida
- To implement a delivery model for Aqua+ (HWTS Product) and ensure its sustainability and scale up in long term

## 2.2 Pilot location

Taking into consideration all factors including service capabilities and probability of product continuity, it was recommended that the Aqua+ should be pilot tested in two sectors of Noida (Sec – 8, 9 and 16). The main criteria for selection of these new areas were:

- Moderate TDS levels (in the range of 100-500 mg/L)
- Community able to absorb the cost of Aqua+ in a monthly basis
- Strong presence of grassroots NGO (FXB India Suraksha) and Community wings of Govt. Hospital (St. Stephens Hospital)

Our intervention areas were **Noida sec 8, 9 and 16 (slum) and Sunder Nagri**: The community consists of migrant workers most of whom hail from Bihar, UP and West Bengal who earn their livelihood by doing daily wages work like building labour works, riksha pullers and small time jobs in the nearby malls. The average reported household income is approximately Rs. 4000 - 5000. The community is situated near a big drain in which the waste of the whole Noida city is dumped. There is no supply of water through Government, people have dug bore well to get water but as the slum is located near to the waterline the water consumed by people is bacteriologically contaminated.

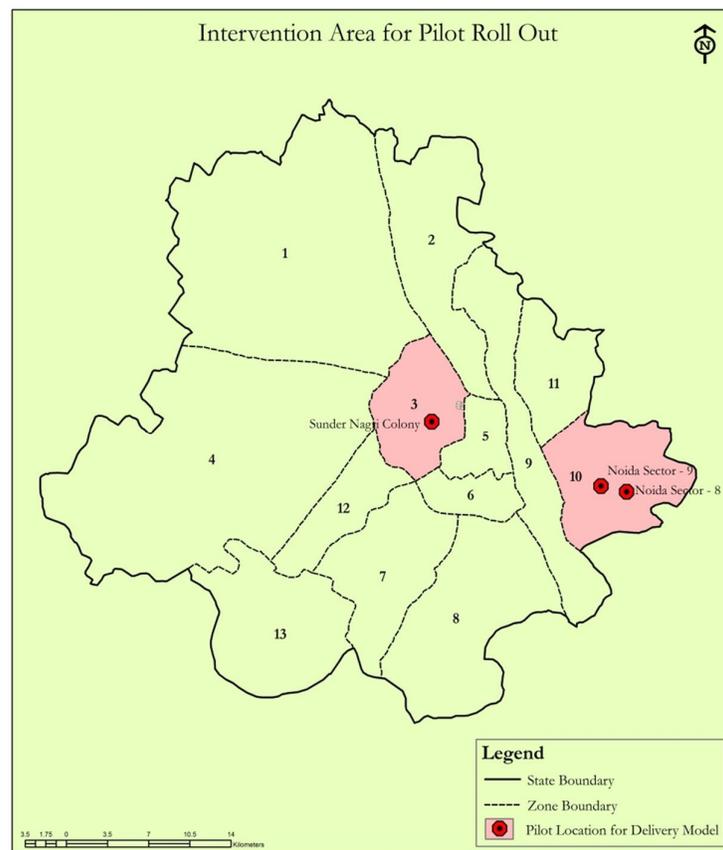


Figure 1: Intervention Areas for Pilot Roll Out of Aqua+

Other intervention area was Sunder Nagri colony beside Dilsadgarden Delhi slums. The blocks in Sunder Nagri colony were found to have degraded drinking water quality with bacterial contamination, a major reason for waterborne disease in this part of area. Based on our primary study of socio-economic, market conditions and existing drinking water quality in the target areas, Aqua+ was considered to be suitable solution for providing safe drinking water services. Based on the experience of working on this product at Noida and on the findings of Sunder Nagri the team came to a conclusion that drinking water being low on TDS and contaminated with bacteria can be effectively treated with this technology.

### 2.3 Existing water quality and current method adopted by the community

The primary study highlights that water is definitely a concern for the respondents and others in their community. The source of water varies from household connections water supply and community taps and bore wells, depending on the location. Slums lack basic water and sanitation amenities and this is adequately proven with majority of the respondents having no access to clean drains, toilets or waste disposal systems.

Water quality testing undertaken in different blocks throughout the Noida (Sec - 8, 9 and 16) and Sunder Nagri area, samples taken from different sources showed evidence of bacterial contamination and were therefore found to be unsafe for drinking purposes. This was particularly evident in samples taken from taps. Forty seven out of eighty samples (58.75%) reflected bacterial contamination. In few samples, the TDS (total dissolved solids) was also found in the higher range. TDS values varied from 120 to 800 in different sources. However, most of the water sources (89 %,) were within desirable limits (< 500 mg/l as per BIS norms). Please see full test report attached in Annexure - 1.

Besides these external conditions, personal hygiene has a major role to play. Awareness about personal hygiene was very high in all the study areas as a result of prior engagement with the community under this project. Almost everyone claimed to wash their hands with soap and cover the utensils carrying water. Boiling, RO bottled water, chlorination or SODIS were observed as the major treatment methods used by the respondents. The choice is determined primarily by the efficacy, cost and ease of use of the method.

However a substantial percentage (~30%) of the respondents did not feel the need to treat water. This is a more serious issue as they believe that the water they drink is fine and stomach ailments, most probably a consequence of poor water quality are a part of life. The project communication will stress on the need for safe water in addition to treatment options to address this issue. The survey also threw up that the levels of literacy were fairly low in the study areas.

### 2.4 Awareness of safe drinking water

Development Alternatives working toward established the supply chain of the Household water treatment solution through liquid chlorine product so that people can have access to safe drinking water products in targeted locations (Noida Sec – 8 and 9 and Sunder Nagri, Delhi). We conducted one week survey within community regarding awareness of safe drinking water and market condition for HWTS product at our intervention area. It has been observed that water borne diseases are taking a toll on

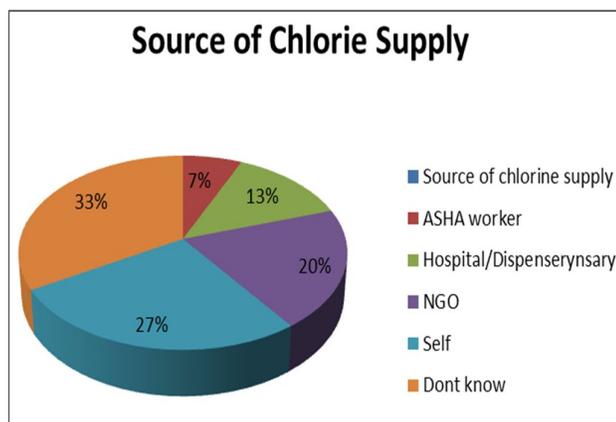


Figure 2: Source of Chlorine supply before design delivery model

livelihoods of the community but they are totally unaware that these diseases are caused due to poor water quality. A few of these diseases are stomach related problems, Typhoid, Dysentery, etc. From survey another message also coming through that was, Safe drinking water beliefs and

practices are linked to socio-economic status, particularly with regard to education levels. Majority of respondents were motivated to purchase the Aqua+ in order to improve their health. Recommendation from our local NGO/Community wings of Govt. Hospital influenced the community members to purchase the Aqua+.

### 3 On-field activity

#### 3.1 Activation and Training

The first step was the capacity building and training of the community anchor. The session was facilitated by Development Alternatives representatives. The purpose of the session was to disseminate knowledge about safe drinking habits and their importance. In addition, the Aqua+ product using technique and required rules regulation for service delivery and business method were discussed. The half-day session aimed at resolving barriers emerging during the sales activity.

#### 3.2 Demand creation through Communication Strategy and Material Development

Demand creation is an essential component for wide scale dissemination of services and long-term sustainability of the model. Prior to the roll out of Aqua+ in the target locations, extensive efforts were put into creating demand for the product. Most of the times the need for safe drinking water is not prioritized amongst the BoP population and therefore these needs remain unmet. There were regular awareness generation sessions conducted in Noida and Sunder Nagri highlighting importance of safe drinking water and how liquid chloride technology provides affordable and effective solution to achieve the same. In addition, street plays were also organized mass campaign for water quality testing and drawing competition among children at these locations. The team also used IEC material (posters, leaflets, hoardings etc.) to facilitate information exchange with the community on importance and handling of safe drinking water. The community was also made aware about their



Figure 3: Street Play within Community

drinking water quality by conducting on-field testing of water quality parameters including TDS using TDS meter and bacterial contamination using Aqua check vials. The on-site testing had a massive impact on the communities.



Fig 6: Campaigning within Community    Fig 6: Audio video session on Hygiene    Fig 6: Community Mobilizing Workshop

Under direct intervention HHs are made aware about HWTS using two communication channel **interpersonal communication** and **outdoor activities**. For **interpersonal communication**, trained community anchors will go to these households to create awareness about need and importance of water, linkage between water and wellbeing of their family, chlorination methods and its appropriate technique and lastly on good personal and environment hygiene practices.

Other than interpersonal communication, **outdoor activities** such as street plays and meetings have been conducted in the targeted slum areas with the target population. We have engaged with an organisation which do theme based street plays.

All the communication material developed in the project highlight the relationship of clean water with health and wellbeing/ happiness. All the communication material developed in the last phase was updated and information on chlorination was included in it. The key message was "Clean water is a key to good health and thus family happiness". Other than updating the old communication material, new materials such as stickers, caps, calendars, handouts and books were also included.

We also designed **different Information, Education and Communication (IEC) material** for Aqua+ these are all as follows:

**Concept 1:** Primary Motivator - Health, Theme - Aspirational, Tone - Positive, Route – Advisory & Informative

A few examples:

- Swatch jal behtar kal (clean water better tomorrow)
- Tera ghar ya mera ghar Aqua+ ab har ghar ghar (Your house or my house, Aqua+ is at each house)
- Aqua+ hai na (There is Aqua +)

**Concept 2:** Primary Motivator - Health, Theme - Problem Solving, Tone - Negative, Route - Informative

A few examples:

- Ab kitano se kya darna, Aqua+ hai na (Now why be afraid of germs there is Aqua+)
- Ab beemari se kya darna, Aqua+ hai na (Now why be afraid of getting ill, there is Aqua+)



Flier



Sticker

**Concept 3:** Primary Motivator - Ease of use, Theme - Problem Solving, Tone - Positive, Route - Informative

A few examples:

- Do boond ka jaadu (A wonder of two drops)
- Do boond laaye jeevan me khushhaali (Two drops bring happiness to life)



Figure 7: Sticker, calendar and poster for Promotional activity

### 3.3 Monitoring and follow up

First level regular monitoring carried out to review the progress of work in the project by the community anchors/SHG. At second level monitoring has been done by Development Alternatives team to inspect the field work. The field visits helps in cross checking the data presented by the community anchors. Minimum of two visits in a week has been carried out to each area to review the progress of work on the ground.

### 3.4 Record keeping and tracking of orders

The approach for the field roll out was similar in all location. Demonstrators provided support to the local community anchors/ selected shop keepers in Noida/SHG in Sunder Nagri. Each of the community anchors was provided with a customer register to keep track of sold Aqua+. The register contained the name, address, date of booking for the Aqua+. The date of booking is recorded to help the anchor and end user to determine the date of re-sail the product.



Figure 8: Weekly monitoring meeting at St. Stephens Hospital with SHG members and DA representative

In addition, a regular record keeping and tracking system were set up. These records were

maintained at community level by identified SHG members in supervision of a St. Stephens' representative in Sunder Nagri and in Noida community anchors from FXB India Suraksha monitored all records of local shop keeper. The roll out also followed similar delivery and post delivery services as provided to the customers by Development Alternatives in Delhi

Systems were set up to track the willingness and demand for Aqua+ during the awareness campaigns and follow-up visits. These systems were found to be of significant importance while fulfilling the demand after receiving supply from TARA life Pvt. Ltd. Tracking enabled them to identify the number of Aqua+ which was ordered from either local shop /SHG.

## **4 Recommended market based Delivery model**

In order for our delivery model to be successful, sustainable and scalable, it was vital that the market conditions and socio-cultural environment of the local area be taken into consideration and thoroughly researched.

### **4.1 Local Market**

In general shops are small, with limited working capital and limited space for holding stock. These stores are tuned to low value transactions such as basic household groceries and general 'paan beedi' items. There are some larger stores stocking plumbing and electrical repair items in the wards.

### **4.2 Existing Distribution Mode**

According to primary study 50% respondent complained about unavailability of chlorine in community where as 40 % said that chlorine is available in community only 10% said they don't know in this regard. More than half of respondent nearly 70% said the supply of chlorine is inconsistent and the supply of chlorine to the community is mainly through the dispensary of communities and only 20% buy it from medical shops or other means and rest 10% don't know in this regard.

### **4.3 Recommended model for Aqua+**

#### **4.3.1 MLM concept**

This delivery model was chosen for the pilot in Sec 16 of Noida slums. The focus of the MLM model is to add more "sales entrepreneurs" to the network rather than promoting sales. Thus the incentives have been structured in a similar manner. To join the network a "sales entrepreneur" needs to buy 6 bottles of Aqua+. For the MLM model, the price of the bottle has been reduced to Rs 30 per bottle. Thus by making an investment of Rs 180, the "sales entrepreneur" not only joins the network, but also receives 6 bottles of Aqua+ at a discounted price (otherwise the person would have paid Rs. 252). The "sales entrepreneur" is free to use these bottles as he/she pleases. They can use the bottles themselves, share it with the neighbours or even sell it in the market to recover their investment.

The incentive is provided to the "sales entrepreneur" when he/she adds more members to the network. There are two kinds of bonuses that the "sales entrepreneur" can become eligible for: Level Bonus and Group Bonus.

The "sales entrepreneur" becomes eligible for Level Bonus when he/she directly adds 3 people to the network. When these 3 newly added people added 3 more people each to the network, the "sales entrepreneur" becomes eligible for Group Bonus (when 9 new people join the network).

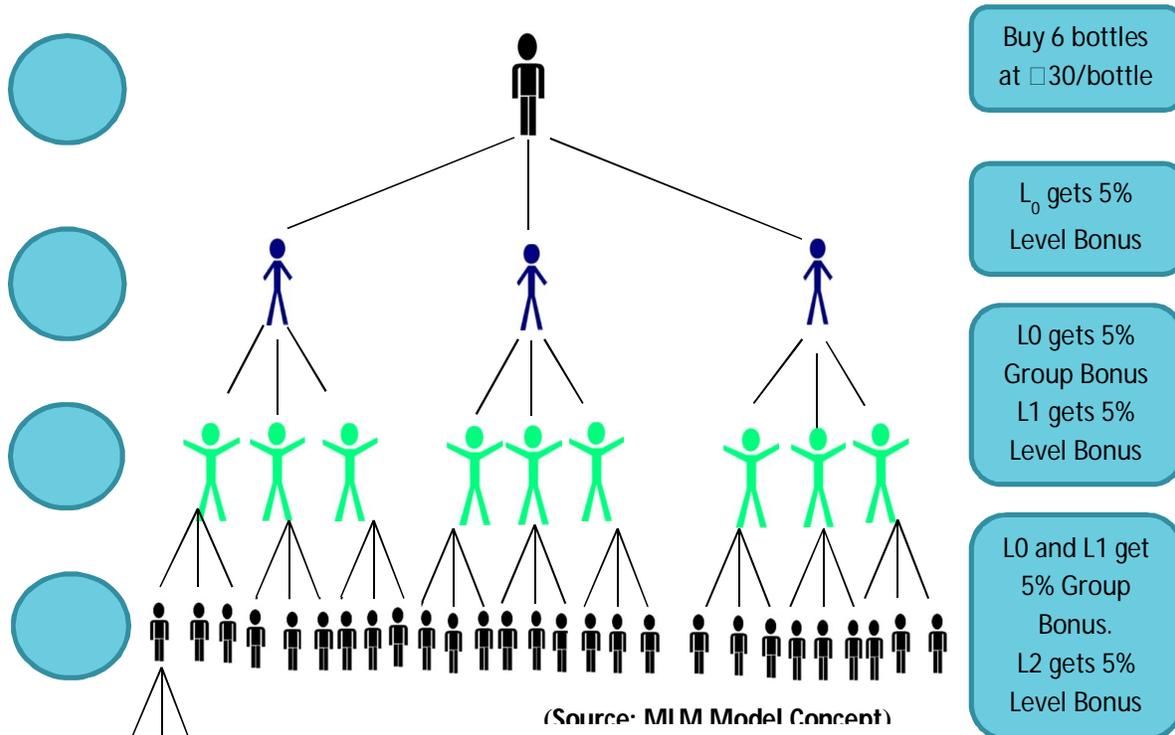


Figure 9: Multi-Level Marketing Model

### Level Bonus

When the "sales entrepreneur" at L1 adds 3 members to the network (at L2) he/she becomes eligible for Level Bonus. Level bonus is calculated as 5% of the total sales made. Thus the Level Bonus is Rs 27 (5% of Rs 540). If the "sales entrepreneur" can add only 2 members, then he/she is not eligible for the Level Bonus. Only when there are a total of 3 members does the "sales entrepreneur" become eligible for Level Bonus.

Each level, under a single "sales entrepreneur" can accommodate only 3 members. In case the "sales entrepreneur" adds more than more than 3 members, then he/she has the option of either starting a new chain with the additional members or add the additional members at a level further below.

Level Bonus is applicable for only new members that join the network and can't be claimed twice for the same people. Thus it is a one-time bonus.

### Group Bonus

After the "sales entrepreneur" at L1 has become eligible for Level Bonus he/she can strive to achieve Group Bonus. This is the bonus that provides a recurring source of monthly income. After L1 (working with L2) successfully adds a total of 9 people in the network, he/she become eligible for Group Bonus. Group Bonus is calculated as 5% of the total sales made. This amount keeps increasing the more the levels the "sales entrepreneur" has below him/her. For L1, the Group Bonus is initially Rs. 81 (5% of Rs. 1620). Once L4 gets successfully created, L1 gets a group bonus of Rs 243 (5% of Rs. 4860). Thus the chain keeps moving and the Group Bonus keeps increasing exponentially.

Group Bonus is applicable for new members that join the network and can't be claimed twice for the same people. However, if the same people add more people to the network, then the "sales entrepreneur" becomes eligible for Group Bonus by indirectly adding people.

### MLM Model – Initial Projections

Apart from creating social impact, the MLM model also provides an attractive financial return to the "sales entrepreneur". This has been designed to ensure that the model is sustainable. If the model runs at 100% efficiency for 8 months, then TARA will generate revenue of Rs. 1, 04, 63,040. More importantly, the "sales entrepreneur" will also achieve attractive financial returns. However, calculations for different scenarios have also been done. The same are shown in the table below:

**Table 1: Multi-Level Marketing Model - Initial Financial Projection**

Type of Bonus to Entrepreneur	6 Months	8 Months
Level Bonus – 3 people added per month	□ 162	□ 216
Group Bonus – 3 people added per month	□ 34,569	□ 5,14,080
<b>Total Bonus to Entrepreneur – 3 people added per month</b>	<b>□ 34,731</b>	<b>□ 5,14,296</b>
Level Bonus – 2 people added per month	□ 81	□ 108
Group Bonus – 2 people added per month	□ 23,046	□ 3,42,720
<b>Total Bonus to Entrepreneur – 2 people added per month</b>	<b>□ 23,127</b>	<b>□ 3,42,828</b>
Level Bonus – 1 person added per month	□ 27	□ 54
Group Bonus – 1 person added per month	□ 11,523	□ 1,71,360
<b>Total Bonus to Entrepreneur – 1 person added per month</b>	<b>□ 11,550</b>	<b>□ 1,71,414</b>

For the implementation of this model, DA will partner with an organization (FXB India Surakhsa) on the ground. The role of the partner organization will be administrative. The partner organization does not have to promote the sales of Aqua+. The partner organization will do the registration of the "sales entrepreneurs" and the new members that get added on the monthly basis. They will also provide the "sales entrepreneur" with the Aqua+ bottles. In case the "sales entrepreneur" wants to make a repeat purchase of Aqua+, the same can be done through the partner organization at Rs. 30 per bottle.

To support the "sales entrepreneur", DA implemented a social marketing campaign. The main objective of this campaign will be to make the people aware of Aqua+ and ensure the correct usage of the product. This social marketing campaign may or may not be implemented by the same partner organization that does the registration of the "sales entrepreneurs".

DA also developed an IT tool, which records all the "sales entrepreneur" activities and also generates reports about the revenue, profits, number of members in the network, level and group bonus pay-outs and other critical components for the implementation of the MLM model on the ground.

After two month (April and May 2014) continuous engagement with the community, this model has been continued till L1 level. After L1 this chain has been failed in Noida sector – 9 and 16. Because of following reason:

- i. **Fear of Failure:** Doubtful about their ability to succeed and afraid of facing the consequences of failure
- ii. **Fear of Rejection:** This is also related to not wanting to be disappointed when others say “no” to them so they would rather not take action
- iii. **Fear of Success or Losing Relationships:** The fear of losing friends in order to become successful prevents them from wanting to even pursue success in the first place
- iv. **Fear of What Others Think:** Afraid others will judge them negatively when they find out they are involved with a specific endeavor
- v. **Fear of the Uncertainty and the Unknown:** This is especially true if one is attempting something they are not familiar with. For instance if one is thinking about starting a MLM business and is not familiar with the MLM business model, they may have concerns about the professionalism or ethicalness of the business model which if left unanswered will hold them back

#### **4.3.1.1 SWOT Analysis of MLM approach in intervened areas**

##### **❖ Strength**

- Low upfront investment
- No formal employment structure-Independent Business Developer
- Relaxation in other orthodox criteria (Education, Age etc) for association
- First track growth path (Geometric progression)
- Perfect linear relationship in between stipulated target and compensation or rewards
- No large inventory management

##### **❖ Weakness**

- Payment is also linked with new recruitment and their subsequent business along with own product sell
- All the consumers can't be effective promoters
- Low community acceptability (in India)
- Starting income is not lucrative

##### **❖ Opportunity**

- Part-time or flexible business opportunity
- Opportunity to sell the product within known group
- No minimum time boundary for step progression
- Usually vast working territory

##### **❖ Thread**

- Revenues comes from other recruitment may be considered for “Illegal Pyramid Scheme”
- Maintaining motivational level of huge workforce is not easy
- ‘Selling to All’ within known circle sometimes hampers personal relationship

#### **MLM Model – Solutions**

- Generate a new simulation of the market and optimize the bonus pay-outs
- Possibly compensate through grant funding in the initial stages

#### 4.3.1.2 MLM Model Learning's are

Learnings' from the field are as follows:

- Inaccurate assumptions made for initial data projections
- Multiple chains are difficult to create and maintain
- Very little initial return on investment. Short-term benefit given greater weight when long-term benefits are overlooked
- Perceived complexity and lack of understanding of the workings of the model
- Lack of conviction that the model will be sustainable
- Pricing and costs of product need to be update

#### 4.3.2 Market Based Business Model

The model is centered on Retailer/ shop keeper as local entrepreneurs' and Community anchors from FXB India Suraksha made aware about the low HWTS products that are available in the market. This new and emergent delivery model was chosen for the pilot in Sec 8 and Sec 9 of Noida slums as there was no requirement of working capital to implement the model. In addition this model allowed for direct Technical support and training to community anchors of FXB India Surakhsa and selected local shopkeepers by Development Alternatives. As per the model, it was strategized that one entity (the identified retailer/ shopkeepers) will undertake a long term business initiative and be the driving force in the identified geographical domain. For sustainability of this model and to create a behavioral change through three months continuous use of Aqua+, project team has been decided to packaged 3 pieces of Aqua+ in each pack at the price of Rs. 90. Also this model considered upfront payment options to overcome the financial barriers to widespread dissemination of safe drinking water services amongst the community. The interest ratio on this amount was kept minimum (RS. 9/Pack) by the shopkeepers/retailers.

**The key actors of the Models are:**

##### **TARAlife Sustainability Solution Pvt. Ltd.**

The new company became operational as of April 2014. TARAlife now makes profits by providing safe drinking water to the Base of the Pyramid (BoP) households in India.

DA facilitated the link with TARAlife to ensure that the product can reach the retailer and mobilized community anchor.

##### **Local NGO (FXB India Surakhsa)**

The presence of a strong grassroots NGO was one of the initial selection criteria for the model. The NGO would help to select and activate local Shopkeepers, while raising awareness of the importance of safe drinking amongst the communities to create demand for the product. The selection criteria for the NGO included:

- Knowledge and awareness of existing water quality issues in the area and interest in resolving these issues
- Work experience in promoting safe drinking practices or in other similar enterprises
- Influential member of the community with networks running throughout the area and the confidence to communicate with the other residents in order to change their mind-sets regarding safe drinking practices

Based on these criteria FXB Suraksha was selected for the pilot. FXB Suraksha was initiated by group of social activists and professionals with a mission to stride social, economic and political change in the lives of people.

**For the pilot, FXB India Suraksha took a lead on**

- Initiate a campaign on demand generation
- Select interested retailer/ Shopkeeper
- Provide information support to the selected Shopkeeper and community

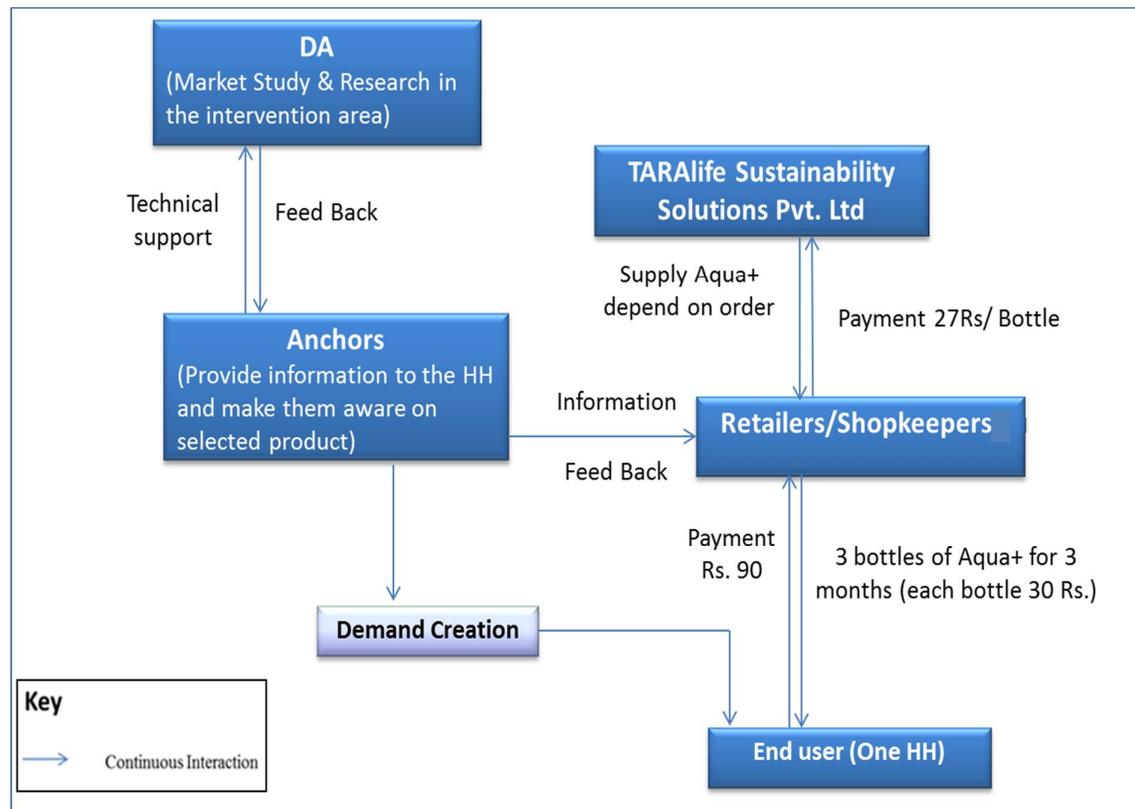


Figure 10: Market Based Business Model Schematic for Noida Sector 8 and 9

During Development Alternatives in targeted area, Households are made aware about Aqua+ using three communication channel interpersonal communication, outdoor activities and school awareness. To track all activities group meeting was conducted in weekly manner.

For interpersonal communication, trained community anchors go to these households to create awareness about need and importance of water, linkage between water and wellbeing of their family, treatment methods through Aqua+ and its appropriate technique and lastly on good personal and environment hygiene practices. The first visit has been conducted by community anchors to the targeted population to make them understand about the need and importance of water and also for making the database of all the Households targeted. In all the Households adopted Aqua+, community anchor put up a Aqua+ sticker on their Door. Till date we have the database of around 777 HHs who are using Aqua+. Other than interpersonal communication, outdoor activities are conducted in slums of Delhi.

### 4.3.2.1 Catalyst and Challenges

#### Catalyst

There were some factors that helped accelerate progress in the pilot:

- On-site water quality testing proved to be a very good tool to bring about awareness in the community to initiate behavior change. The community was amazed as it was new for them to learn that RO water that looks clean can be impure.
- Street plays had a good impact on the communities
- Packaging of Aqua+ is pretty attracted by the community
- Ease of Use is major factor which guides consumer behavior
- Easy Availability of the product is essential for supply chain delivery

#### Challenges

The roll-out of the pilot in Noida sector - 8 and 9, the project team encountered challenges which impeded the progress of the pilot.

- **Negative rumors about the product branding form local RO shopkeepers and other cheaper water sources:** Prior to the pilot roll-out, we were aware that there was filtered canned water being provided to the residents from a local supplier; however it was not until after the roll-out of the pilot that we discovered that there are a number of pockets in the area with R.O purifiers, with water selling as low as Rs.5 / 10ltrs of water. In these areas in particular our product was therefore viewed as less attractive; it is competing with household water treatment product. Also RO owners were creating a negative rumor against within community that also affects general flow of delivery model and product acceptance. To overcome this situation Development Alternatives arraigned On-site water quality testing through H2S vial and output water quality testing (after Aqua+ dosing). During H2S vial testing few RO bottled water also shown bacterial contamination that incident opened up the eyes of community and they are insisting on treatment of water before consumption.
- **Alternative/cheaper sources of clean water:** Prior to the pilot roll-out, we were aware that there were a number of different sources from which residents procured their drinking water e.g. DJB Board tankers, hand-pumps and filtered bottled water. We were also aware that there was filtered canned water being provided to the residents from a local supplier; however it was not until after the roll-out of the pilot that we discovered that there are a number of pockets in the area with R.O purifiers, with water selling as low as Rs.5/10 ltrs of water. Furthermore, in a couple of pockets, – the residents have been given free chlorine tablet via government schemes and through local politicians.
- **Entrepreneurial Challenges:** Discovering and nurturing entrepreneurship is not an easy task, more so in areas where most people were accustomed to the idea of a fixed monthly salary. Commission based and target driven work was outside their comfort zone. This can in part be attributed to the lack of confidence and risks involved in reaching out to communities and creating enough demand for the business to be profitable. In sector - 9, the roll out of the model has shown appreciably results even in shorter span of the on-field activity due to the involvement of Pradhan of the area with on-field support provided by his assistant. This support essentially helped in strengthening engagement with the community and building up their confidence for

the on-going activity in the area. Moreover lessons from experiences at Noida helped in formulating strategy and initiating work at Sunder Nagri Colony as the work here started in succession of Noida Sec 8 and 9.

#### 4.3.3 The Peers Model

Learning from the lessons in Noida slum, the team decided to pilot a modified model in Sunder Nagri colony at Delhi. Continuing with a market based peer influence model, Youth (College Student) Self Help Groups (SHGs) were introduced to the model. To overcome the challenges of long term influencing the local shop and community anchor as community mobilizer, the presence of a strong local SHG was considered as a critical factor for selection of the location during the pilot roll out in Sunder Nagri. A community wing of St. Stephens Hospital was selected to enhance the outreach of services to the community. Also, the confidence of the community in the St. Stephens Hospital would serve as a driver for behavioural change. Based on our experience during the Noida roll out, behavioural change in the community is essential component for wider dissemination of safe water services especially as these services are often not prioritized by the BoP. Community wing of St. Stephens Hospital was also involved in selecting and providing technical and institutional support to the SHG. The model as seen in Figure 5 is centered on involvement of COSMOS Self Help Group, a SHG in the role of the entrepreneur. It was strategized that one entity (the identified SHG) would undertake a long term business initiative and be the driving force in the identified geographical domain. It will leverage the role of local entrepreneurs, who can promote the Aqua+ in their available time to generate some extra income whenever and wherever possible.

Development Alternatives enabled the SHGs to procure the Aqua+ at a lower rate of Rs. 27, as the cost of the distributor eliminated in this model. In this model, the product was sold at the market price of Rs. 40 to the end customers; the capital(Rs.27) has been refunded to SHG by each member and rest of the profit amount (Rs. 13 per each bottle) leaving with each members. Depend on number of selling the Aqua+ bottle profit has been increased for each member and next capital amount for purchased order also kept secured. All responsible members for each block have maintained log book for each household who are adopted Aqua+ for their daily life. This model has activated two and half months back, till date we have the database around 300 HHs who are adopting this product (Aqua+).

#### **Key Actors in the Model are:**

For the pilot, **St. Stephens Hospital** along with Development Alternatives took a lead

- Select few enthusiastic young college students from local community to build a strong SHG
- Provide technical support to the selected SHG
- Maintained team dynamics of SHG through fortnight meeting, data sheet maintain and financial training for account maintain

They initiated a community level campaign in the identified blocks and wards on raising awareness about safe water and water quality issue, its importance and options to ensure safe water. They played a key role in fine-tuning the delivery model with field inputs. In order to strengthen the promotional network, commission on the products was also made fixed and was shared with the potential promoters within the institutions SHGs.

## COSMOS Self Help Group

Selected COSMOS Self Help Group played the role of a local entrepreneur, in order to manage sales during and after the project. Development Alternatives facilitated the linkage between the manufacturer, TARAlife Sustainability Solution Pvt. Ltd and the COSMOS Self Help Group.

This model will enhanced livelihood options to habitats of nearby villages. This project gave them a new avenue for livelihood generation while meeting the need for supplying safe water.

In order to engage the SHG and ensure their long term participation in the activity, the following incentives and key support systems were provided:

**Field Support for SHG:** In order to provide the SHG with initial field support and on the job training, 2 experienced marketing professionals from Development Alternatives trained the SHG members. The aim of the training was to orient them to the product and its features. This would enable them to promote and market the Aqua+. The idea was to assist the SHG members so that they would be confident enough to continue in their role in long term.

The DA representatives also trained the SHG member to the MIS management of stock entry and finance management for this business model. This idea was assist them to efficiently use the youth member for this model.

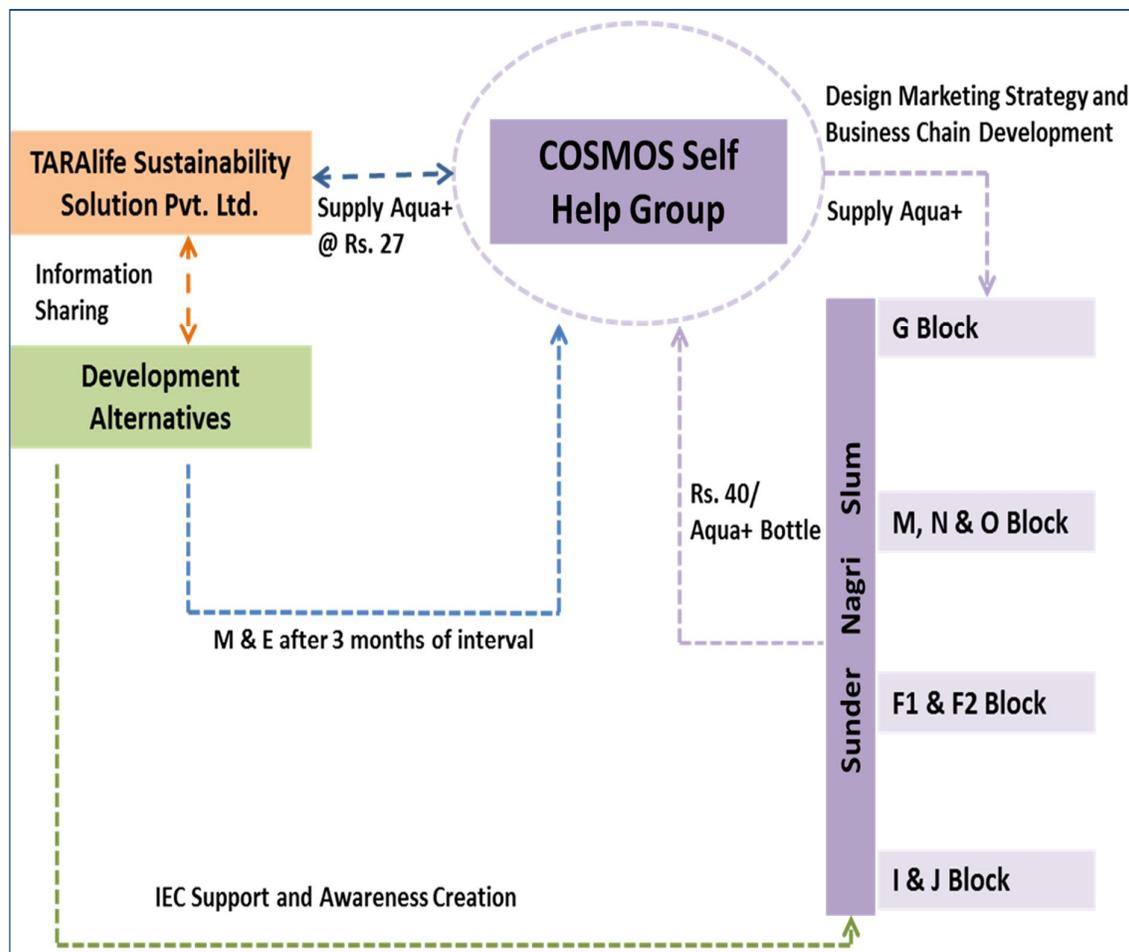


Figure 11: Peers Model Schematic for Sunder Nagri

**Incentives for SHG:** TARAlife provided the SHGs, the Aqua+ at a lower rate of Rs. 27; as the costs of the distributor were eliminated in this model. The Aqua+ was then sold at the market price of Rs. 40 to the end customers, leaving the SHG with a profit of Rs. 13. This provided an incentive to the SHG members to take up this model.

#### 4.3.3.1 *The Challenge*

- **Perception of water quality regarding safe drinking water**

Within the targeted location, although a number of people were aware of the health impacts caused by contaminated water, a great many showed little interest in the product and were more concerned with the taste and smell of the water than with its levels of contamination; in some cases we spoke to families who were using the Submersible water for drinking and didn't appear to see the value in the Aqua+.

**Solution Strategy:** The literature which we provided as part of our promotional activities, including leaflets, posters and banners contained information regarding the possible impacts of drinking contaminated water and highlighted the key features of Aqua+. The leaflets were handed out to residents and the contents explained by the SHG member. The DA team also spent time explaining clearly the health benefits brought about by the chlorination of their water and visually demonstrated the difference in the chlorinated water and the water originally consumed by the stakeholders. A 'street play' highlighting the importance of safe drinking water habits was also organised in a common area of the colony. The play was attended by a 25-30 residents from all blocks in Sunder Nagri.

- **Lack of Existing Market:**

Aqua+ is not readily available in the nearby markets of Sunder Nagri. The nearest procurement of Aqua+ for the on-going activity is made from the TARAGram of Uttar Pradesh, which often consumes more than one week time in delivery product as it takes money transfer, communication, packaging and transportation. Time consuming process of delivery to the target location is eventually leading to loss of interest in the community especially creating issues with the individuals who have paid for the services in advance.

**Solution Strategy:** In order to speed up this process, the project team and also the local SHG is in close contact with manufacturer tracking the delivery of the orders. Efforts have also gone into making the manufacturer realize the potential of the market, which will also drive timely delivery of orders to the customers from the project team.

## 5 **Lessons Learnt**

The pilots lent themselves to a lot of learning on issues of access to water as well the support systems. The section below highlights some of the key lessons learnt from the experiences in Noida and Delhi.

- **Women are not decision makers**

Women are not traditionally decision makers in the household. However out of necessity, our promotional activity, including the live demonstrations, had to take place during the day. At this time we found that many of the woman's husbands were out at work and the activities were therefore being targeted at the wrong people; the women were unable to commit to purchasing Aqua+

without consultation and the men were largely absent for the promotional drive and demonstrations.

Solution Strategy: The team in the field has been taking names and addresses of interested parties whose husbands are not at home, in order to make appointments for demonstrations at a later date.

- **Influencing behaviour change in the community for safe drinking water services**

Based on our understanding of the attitude of BoP towards safe drinking water services this section of society is aware about the health impacts associated with contaminated water, however, the need for such services often gets neglected over other priorities. Therefore, it becomes imperative to influence a behaviour change for safe drinking water. For this media/Street play/Awareness generation campaign can play a very vital role in bringing out changes at grass root level, in creating much-needed awareness and behaviour changes amongst the public at large. It was observed that the best method to change people's mind set is "Wall painting, audio visual play and street play". In addition, sessions involving close interaction between the community and influential individuals from medical field, water industry etc were helpful.

- **Engaging with local NGO/SHGs can better facilitate service delivery mechanisms**

Based on our experience from the on-field activities, it can be clearly concluded that the peer influenced model are very successful for providing safe drinking water services, however similar models for other products such as of Amway has shown appreciable results in urban space. The reason for the same is because safe drinking habits are not often prioritized and hence the demand is very limited, which is usually perceived as a risk by the entrepreneurs as it questions the profitability of the business. Therefore, these entrepreneurs are only interested to work in models from where they can derive fixed salaries on the monthly basis.

Engaging with local NGOs, youth, school children and SHGs who have been engaged with the community from a long time in similar kind of engagements would be beneficial in terms of their understanding on the needs of the community and the confidence community has on them. During our activities in Delhi, the engagement with local NGO as a facilitator proved to be fruitful. The rapport the intermediary agency had built with the community was used as leverage to promote access to safe water.

- **Parallel delivery channels that provide solutions free of cost has distorted the market and exercised an unfair competition to private sector supply chains**

- **With television and radio, the BoP households are aspirational and brand conscious. While the solutions need to be affordable, they can't be cheap or compromise on quality**

- **Aesthetic aspects - A value add to enhance product acceptability**

In addition to the parameters such as affordability, effectiveness in treating water and ease of use, adding aesthetic value to filter in term of its looks drives the attraction of BoP customer. Customers care about what they buy, aspirations play a major role. Aesthetics are an important decision making factor and should not be neglected in favour of affordability.

## 6 Way forward

The study highlighted the hypothesis that access to water is impeded by the lack of appropriate delivery systems to the Bottom of the Pyramid. The pilots clearly demonstrated that there is a demand for safe water. However to convert this demand into changed behaviour and practice, there is a need for customers to see clear value in the product. This value is both in terms of the service offered and a perceptible difference from the raw water baseline as well as the financial value of the product, in terms of easy of payment and the total value.

In order to be able to service the BoP, it is important to develop and strengthen the delivery mechanism. The pilot showed that penetration and conversion was much higher in spaces, where there was trust at the point of delivery. Building capacities of all points of the chain is important to ensure smooth movement of the product and service. There also needs to be work on the research and incubation end.

There are a few aspects that need to be looked at priority programming action recommendation:

- Create awareness and /literacy of the types of water pollution (bacteriological and chemical) and awareness for an appropriate HWS response. Backed by regular water quality checks at point of use of households
- Priorities awareness of the need for treatment of water and safe storage, as a campaign on regular basis. Based on the local water quality problem that are demonstrated from practical water testing methods and are understood by people. This awareness should be an all the year round initiatives, perhaps as strengthened national and local level diarrhea control initiative
- Awareness generation and motivation for local leaders and youths – all informal settlements have their informal leaders and religious heads who can motivated to promote HWTS product (like :Aqua+)
- Support initiatives for profit and non-profit organization to market HWTS with innovative packages and service provision for operations and maintenance

## Annexure 1: Water Quality Assessment Report

Water quality of Noida Sector 8, 9, 16 Sunder Nagri colonies has been tested for bacterial contamination and TDS. Most of the sources were found contaminated with bacterial contamination and a few samples also had higher TDS values. Comprehensive results of the water sources have been given in the table below. The table has also have standards for TDS and final columns to say if the water is potable or not.

As visible through above information, it is clear that bacterial contamination is the major issue in the targeted villages. As more than 62.5% of the samples are contaminated with the bacterial contamination. This is also reflected in the health related issues in the slums. Campaigns have been initiated to create awareness about the safe water options and their relative significance, like boiling water, filtration using different technologies and their aspects like effectiveness and storage practices etc.

Sl. No	Location	Average TDS* value (mg/L)	Aqua Check Vial*	
			Samples Tested	Contaminated samples
<b>Noida Sector 16</b>				
1	Source: Bottle Water (Local RO Water)	730	4	0
2		378	4	0
3		366	4	0
4	Source: Supply Water	168	4	3
5		169	4	3
6	Source: Bottle Water (Local RO Water)	790	4	2
7	Source: Submersible Water	182	4	4
8		432	4	4
<b>Noida Sector 9</b>				
1	Source: Bottle Water (Local RO Water)	140	4	1
2		630	4	2
3	Source: Supply Water	610	4	2
4		444	4	2
5	Source: Submersible Water	476	4	3
6		140	4	4

Sl. No	Location	Average TDS* value (mg/L)	Aqua Check Vial*	
			Samples Tested	Contaminated samples
<b>Noida Sector 8</b>				
1	Source: Bottle Water (Local RO Water)	556	4	0
2	Source: Supply Water	660	4	1
3		534	4	2
4	Source: Submersible Water	604	4	4
5		511	4	3
<b>Sunder Nagri Colony</b>				
1	F1 Block	460	6	5
2	F2 Block	432	6	4
3	G3 Block	346	6	5
4	G4 Block	398	6	5
5	G5 Block	398	6	3
6	H Block	780	12	4
7	I Block	560	12	7
8	J Block	340	12	5
9	K Block	810	12	6
10	L Block	749	12	3
11	M Block	412	12	5
12	N Block	376	12	7
13	O Block	412	12	8

**NOTE:**

**TDS\*:** Digital TDS Meter Adopted in 2011 by DA

**Aqua Check Vial\*:** TARA - Aqua check vials indicates the presence of bacterial contamination in water. The testing bottle incorporates the H2S strip which when kept with water sample turns black within 48 hours confirming the presence of bacterial contamination

**Annexure 2: Sample Survey Sheet for Water quality and Market study**

### Annexure 3: Aqua+ Sales Tracking Sheet Analysis Report

Sl. No.	Date	Name	Contact No.	invoice No.	Qty	Payment Terms
<b>Location: Noida Sector 8 and 9</b>						
1	28/06/2014	Varsha Rani	8750902162	1553	137	Cash
2	03/07/2014	Najir Ahmad General Store	9958756056	1557	164	Cash
3	03/07/2014	Lal Babu General Store	9891653242	1559	172	Cash
4	22/07/2014	Shashikant Pandey	9810462841	1569	150	Cash
5	23/07/2014	Ikrar Ali	9718347088	1571	154	Cash
<b>Location: Sunder Nagri. Delhi</b>						
6	29/10/2014	COSMOS Self Help Group	9999761919	1597	100	Cash
7	10/11/2014			1601	200	Cash