



IMPACT ASSESSMENT

of Focused Development Program (FDP) P0377
of HDFC Bank CSR

NGO Partner: Aga Khan Foundation

Project Location: Sitapur, Uttar Pradesh

Submitted by:

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EXECUTIVE SUMMARY

About the FDP: HDFC bank carries out its CSR activities under the umbrella of 'Parivartan', through which it tries to reach out to communities and enable them to shift from poverty to growth. The Focused Development Program (FDP) of HDFC Bank CSR is one among its many important programs, where the Bank chooses an implementing partner with expertise in one of the focus areas and tries to improve the lives of the target beneficiaries around that particular focus area. This FDP project, in alignment with the central government's flagship initiative, Jal Jeevan Mission (JJM) - 'Har Ghar Nal sa Jal', focused on 'improving access to safe water among target communities by facilitating construction of water supply services, capacity building of communities to plan and manage their water demand, and ultimately ensuring sustainability.'

The project was implemented between March 2021 to February 2022 by *Aga Khan Foundation*, the NGO supported by HDFC Bank. The key goal of the project was to accomplish the target of delivering potable water via tap connections.

About the Impact Assessment: The proposed study was commissioned to conduct an Impact Assessment of the FDP project P0377 in Uttar Pradesh. The objective of the Assessment was to provide estimates on impact indicators in key domain areas especially proportion of households having access to tap connections and access to safe drinking water; and improved health indicators owing to sustained safe drinking water access. The Assessment also sought to evaluate the efficacy, effectiveness of the project interventions and sustainability of the project's outcomes. A *quasi-experimental Post-Test Only Control Group Research Design* was followed for this study. Data collection methods involved structured quantitative interviews with project beneficiaries at the household level, village level interviews with VWSC (Village Water and Sanitation Committee) or Pani Samiti member and qualitative focus group discussion (FGDs) and Key Informant Interviews (KIIs).

The coverage of the project intervention was across 40 villages in Lucknow and Sitapur districts of Uttar Pradesh. However, given that over 60% of the project beneficiaries were from Sitapur, it was decided to select Sitapur district for the purpose of the Impact Assessment. A sample size of 400 was sought to be covered in the treatment group. For the control group, 50% of the treatment group sample size, that is, 200 was sought to be covered. The control group households were selected from the same villages, but those that did not have a tap water connection. Data was collected from all villages for the Village Level Interviews. Three FGDs were conducted with project beneficiaries, while 10 KIIs totally were done with VWSC/ Pani Samiti member; Women identified for Water Quality, Monitoring & Surveillance (WQMS) and Village Sarpanch/ VDC Member. The data collection for the study was done between 29th September – 10th October, 2023. Sample size across all data collection components was achieved.

Key Project Outcome and Impact:

Access to Household Tap Connection with Regular, Adequate and Quality Drinking Water Supply

- In 92% of treatment households, tap connection installed under the FDP serves as the primary source of drinking water. Alternatively, tube well/bore well was the primary drinking water source for 86% of control households.
- In the past week, 91 percent of households under the project (treatment group) received water all 7 days a week with 6 hours per day as the average duration of the water supply.
- Before tap installation in treatment households
 - 78% of households did not have any tap connection

- Mainly women were responsible for fetching water from the source located outside their household premises (also in the control group)
- Women took up 10 to 11 trips a day to fetch water with a trip duration of mostly up to 15 minutes (also in the control group)
- Majority of the treatment households have indeed benefitted through access to household tap connections under the FDP with complete fulfilment of both their drinking (62%- treatment and 44% - control) and domestic water requirements (similar proportion), as compared to the situation among the control households.
- Over 97 percent of households in the treatment group reported that the water received from the household tap was clear (no colour), with no smell and no taste. The difference between treatment and control group for water colour and taste, was found to be statistically significant, attributable to the good quality water received by the FDP beneficiaries.
- Nearly three-fourths (74%) of treatment households were satisfied with the regularity of drinking water supplied, 89% with the quantity of water supplied, and 80% with the quality of water supplied.
- A significant increase of 22% in daily water consumption was seen in treatment households (295 litre, per capita 49 litre) as compared to water consumption before the installation of the tap (241 litre, per capita 41 litre) implying that the increased water consumption in treatment households is not a matter of random chance, but attributable here to the intervention done and access to tap water provided under the FDP. The increased water consumption in treatment households was statistically significant when compared with control households (268 litre, per capita 45 litre) as well.
- Water was available to households in sufficient quantity whenever needed/ all through the year both in treatment (89%) and control households (94%). The difference however was not statistically significant.

Community Participation and Capacitated Community

- Village Water Sanitation Committee (VWSC)/ Pani Samiti were constituted in almost all villages as part of the rural piped water supply scheme, ensuring inclusion of women and SC/ ST category as its members.
- At the household level, around one-fourth households in the treatment group reported involvement of any member of their household in making the Village Action Plan (VAP) and Water Safety Planning (WSP) for improving water safety for all sources of water supply.
- Through the training received and participation encouraged under the FDP, the intervention ensured that the programme is community led and managed. More than three-fifth villages reported that their village representatives participated in trainings on various aspects such as developing by-laws of VWSC, calculation of water tariff and fixing of user charges, training of plumbers/masons/ pump operators, monitoring water quality and water source performance etc.
- About 12 in 19 villages expressed confidence of being equipped to a very large/large extent to monitor and maintain the functioning of the water system in the future.
- Even when majority villages confirmed that user charges and water tariff were decided by Gram Sabha and agreed by community members, only 7% treatment households had paid the initial amount to the Jal Prabandhan Samiti (JPS) towards tap connection fees. Currently, the proportion of HHs that pay monthly water users' fee for the tap water connection is 18%. Remaining 82% of the households have reported not paying the monthly user fee, with over four-fifth reporting that

they had no information on monthly user fee or about its payment/ no one came to collect the fee or ask for it/ that it was a free service.

- The grievance redressal mechanism for repairs of the water structure requires improvement, as majority members of the community are unaware of the support for repairs. Among those who were aware, the Gram Pradhan primarily and Pani Samiti members to some extent are seen as the point of contact for repairs of household taps.
- Nearly 60% of the households in the treatment group reported that the last *Jan Choupal* was held in the village more than a year ago to discuss service-related issues of the water supply scheme.
- About 10 in 19 villages confirmed that at least 5 women/adolescent girls been given training in the monitoring of water quality through Field Test Kits. However, only 36% of the households in the treatment group were aware of women/ adolescent girls in the village, known as Water Warriors, who are responsible for checking the quality of water from this piped water scheme. Of them 69% HHs confirmed water being taken from their HHs by Water Warriors for water testing and all confirmed of their water being declared fit for drinking. This finding indicates a gap in awareness of households regarding women/girls identified as Water Warriors, which in turn poses a challenge in the latter's ability to dispense their role.

Measures towards sustainability of water source adopted by HHs and community

- Most village representatives, during the village survey, opined that the FDP has enhanced the community's awareness about environmental sustainability.
- Village representatives agree that rain water harvesting, water absorption tanks or pits are important measures for ground water recharge.
- However, at the household level, only 29% of households reported to have received training in rainwater harvesting. Of them, 23% established a rainwater harvesting system in their household. Only 2% of the HHs adopted any practices for the reuse of household wastewater. However, awareness of treatment households about specific training on rainwater harvesting and water reuse is noticeably low. It implies that further training would have a triggering effect on their awareness and practices in the area of water conservation and sustainability.

Improved health indicators and reduced burden of water-borne diseases

- As per the village survey, there had been a decreased incidence of waterborne diseases in the community, after the installation of taps in people's households. The treatment households reported having an incidence of typhoid fever (49%), malaria (31%), and diarrhoea (21%) in the past 6 months, mostly affecting women aged 18-50 years. This proportion was almost the same for control households as well, with no significant difference.
- In the last year and after the implementation of the FDP, treatment households reported spending an average of Rs.6541/- for treatment of water-borne diseases which is 9 percent lower than the earlier amount of Rs.7165/- which they used to spend before getting access to potable water through the FDP. The difference in expenditure was statistically significant indicating an impact of the FDP. For the control households, the average expenditure on treatment of water-borne diseases was Rs.5983/-. The difference between control and treatment households in this regard did not produce statistically significant results.
- About 79% of the households in the treatment group reported that the incidence of such water-borne diseases has reduced in their family due to the use of clean tap water installed under this piped water scheme. Of these, 97% of households perceived that the cost of treatment for such

water-borne diseases therefore also reduced. This may be seen as a major impact of the installation of household taps.

Empowerment of women and adolescent girls

- In the treatment households, the installation of taps reduced the burden to a very large/large extent for HH members especially women, in time and effort otherwise spent in fetching water (81%).
- Women/adolescent girls' involvement in water testing has enhanced completely/to a considerable extent their capacity and leadership (43%).
- The involvement of women in this community-managed piped water supply scheme has helped them completely/ to a considerable extent to participate more in village activities and share their opinions (45%).

In Sum: KEY PROJECT OUTCOME AND IMPACT

- 78% treatment households did not have any tap connection prior to tap installation under the FDP.
- Tap connection installed under the FDP serves as the primary source of drinking water for 92% households.
- A significant increase of 22% in daily water consumption before and after installation of tap was reported in treatment households. Significant difference also reported between treatment and control households.
- Over 97% of households in the treatment group reported tap water to be clear (no colour), with no smell and no taste. Difference between treatment and control group for water colour and taste, was found to be statistically significant.
- A significant decrease of 9% in expenditure incurred for treatment of water-borne diseases was reported

Recommendations:

Based on the study findings, a few key recommendations emanate:

1. Continued emphasis on awareness generation of water quality testing is needed since that would go a long way to further improve the outcome of water quality monitoring.
2. It is evident from the findings that the training has been imparted to the villagers on water conservation and source sustainability. However, there is need to strengthen implementation of these learnings into practice at the household and community level such as rainwater harvesting and reuse of water.
3. Ensuring strengthened mechanisms for monthly tariff collections would be helpful to maintain sustained functioning of the water structure and its smooth operation and maintenance.
4. Awareness generation of the grievance redressal mechanism for repairs of the water structure may go a long way to sustain the water infrastructure in future.
5. Regular meetings of *Jan Choupal* would not only increase community participation but also help the awareness generation and hence redressal about the various day-to-day issues of water supply

CHAPTER 1

Introduction

HDFC bank carries out its CSR activities under the umbrella of 'Parivartan', through which it tries to reach out to communities and enable them to shift from poverty to growth. Through interventions in the areas of *rural development, education, skill development and livelihood enhancement, healthcare & hygiene, and financial literacy*, Parivartan aims to contribute towards the economic and social development of the country by sustainably empowering its communities.

The Focused Development Program (FDP) of HDFC Bank CSR is one among its many important programs, where the Bank chooses an implementing partner with expertise in one of the focus areas and tries to improve the lives of the target beneficiaries around that particular focus area. Systematic routine monitoring and independent evaluations are regularly undertaken to assess the effectiveness of projects under their programs.

The proposed research was hence commissioned to conduct an Impact Assessment of the FDP project P0377 which was implemented between March 2021 to February 2022 in 40 villages in Lucknow and Sitapur districts of Uttar Pradesh, reaching out around 40,000 people across 4973 households. The key goal of the project was to accomplish the target of delivering potable water via tap connections.

This FDP project was focussed to improve access to safe water among target communities by facilitating construction of water supply services, capacity building of communities to plan and manage their water demand, and ultimately ensuring sustainability. To this end, new piped water supply infrastructures were established, existing dysfunctional water schemes were rehabilitated, along with the incorporation of source sustainability measures of recharge and reuse through grey water management, water conservation and rainwater harvesting within the implementation plan. In alignment with the central government's flagship initiative, Jal Jeevan Mission (JJM) - '*Har Ghar Nal sa Jal*', under the Ministry of Jal Shakti, this project aimed to ensure access of piped water supply of 55 litre per capita per day for every rural household in India complying with BIS10500 water quality standard.

The key objectives of the project so implemented, included:

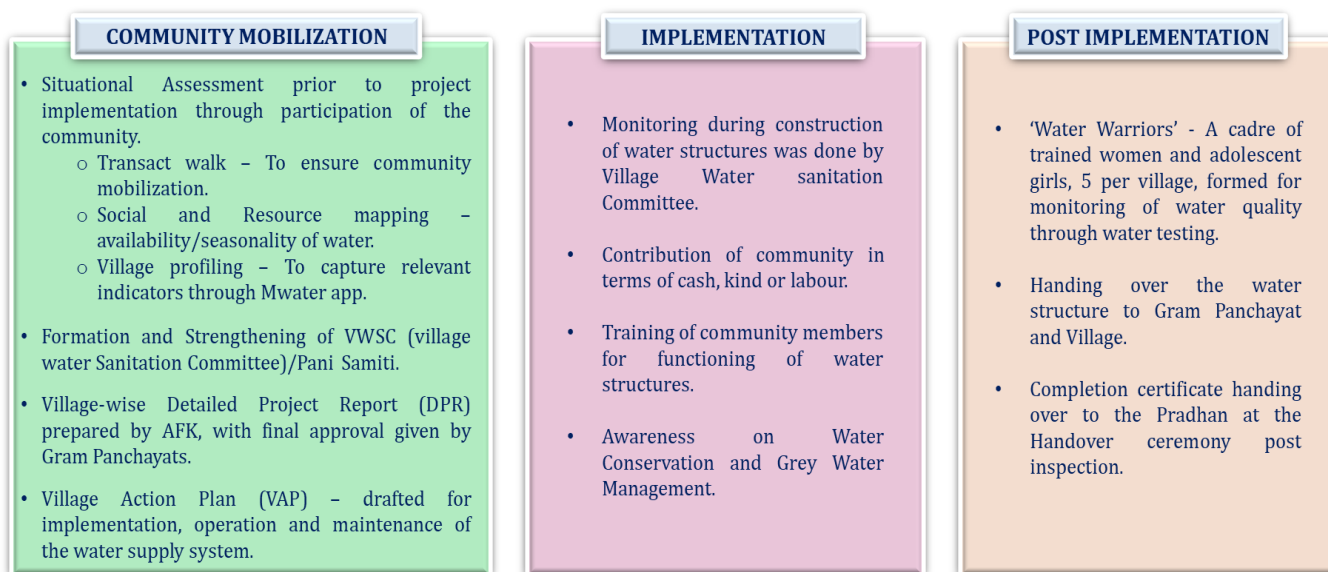
Project Objectives



- To provide access to safe drinking water by means of Functional Household Tap Connections (FHTC) in the project geographies.
- To demonstrate the models of community managed water supply schemes within the wider water security and safety framework.
- To assist the district government in scaling up of the proposed models to increase rural communities' access to FHTC, as envisaged under JJM.
- To institutionalize the management of rural water supply service delivery to local governments and communities.

The key activities undertaken as part of the project intervention are shown in Figure 1.1 below.

Figure 1.1: Key Activities undertaken as part of FDP P0377



CHAPTER 2

Study Methodology

This chapter describes the research methodology adopted for conducting the said Impact Assessment.

2.1. RESEARCH OBJECTIVE AND RESEARCH QUESTIONS

The objective of the Assessment was to provide estimates on impact indicators in key domain areas along with evaluation of the efficacy, effectiveness of the project interventions and sustainability of the project's outcomes. Through the Impact Assessment, answers were sought to the following Research Questions:

- What proportion of households have access to tap connections and have access to safe drinking water. What is the impact of the program on household/members.
- Whether the households have the reduced economic burden due to installation of solar panels in the project areas.
- Whether the project is able to establish sustained safe drinking water access including improved health indicators (incidence of diarrhoea, arsenocosis).

2.2. RESEARCH DESIGN

A **quasi-experimental Post-Test Only Control Group Design** was followed for this study. The assessment predominantly focussed on collecting quantitative data from project beneficiaries using a structured questionnaire which helped arrive at quantifiable results on the impact indicators; the qualitative techniques of data collection was also used to gain descriptive insights and complement the overall quantitative findings.

In the absence of baseline information, data from the treatment group was collected through a retrospective recall approach. In addition, for parameters or indicators where retrospective recall approach was not appropriate, data from the control group was sought to be collected.

2.3. SAMPLE SIZE AND DATA COLLECTION METHOD

The coverage of the project was across 40 villages in Lucknow and Sitapur districts of Uttar Pradesh. However, given that over 60% of the project beneficiaries were from **Sitapur**, with a coverage of 2774 households, it was decided to select Sitapur district for the purpose of the Impact Assessment. The list of beneficiaries was provided to MODEL Resource at the beginning of the study.

Data collection for the study involved the following components:

- Household Interviews (Quantitative)
- Village Level Interviews (Quantitative)
- Qualitative Component
 - Focus Group Discussions (FGD)
 - Key Informant Interviews (KII)

Household Interviews (Quantitative): A minimum sample size of 400 interviews was conducted at the household level drawn from the villages in which the program has been implemented. This sample size is deemed sufficient to estimate the main indicator of interest within 5 percent points and a confidence level

of 95% for each sub-group of interest. This level of precision was considered sufficient to establish the level of this indicator to inform survey objective decisions, using the following formula:

$$n = \frac{z^2 pq}{d^2}$$

Where; n = the desired sample size (when population is greater than 10,000); z = the standard normal deviate, here set at 2.0 which corresponds to 95% confidence level; p = the proportion in the target population estimated to have a particular characteristic. As there is no reasonable estimate, here it is taken as 50 percent (.50); q = 1.0 – p; d = the degree of accuracy desired, here set at .050.

It may be noted that the exact sample size arrived through the above mentioned calculation is 384. However, taking into consideration non-response rate, the sample size was rounded-off to 400.

Thus, a sample size of 400 was sought to be covered in the treatment group. For the control group, 50% of the treatment group sample size, that is, 200 was sought to be covered. Hence, a total quantitative sample size of 600 was decided at the household level – 400 in treatment group and 200 in control group. The control group households were selected from the same villages, but those that did not have a tap water connection. *The final achieved sample size at the end of the data collection was 410 for treatment and 210 for control.*

Table 2.1 Project Coverage and corresponding sample size achieved

District	Category	Block	No. of Villages	No. of Project Households	Treatment Households	Control Households
Sitapur	FHTC under RWSS Project	Sidhauli	18	2774	410	210

Sampling Approach: In Sitapur, the project was implemented under two categories: FHTC under RWSS Project (Sidhauli block) and Retrofitting Scheme in RWSS Project (Gondlamau block). Given that under the Retrofitting Scheme, community taps were installed and not household taps, it was decided by HDFC Bank CSR to focus only on household tap connection. Hence data was collected only from Sidhauli block.

All treatment villages were covered for the Impact Assessment in Sidhauli block. Sample households (treatment) were selected proportionately from each of the project villages. In the same villages, control households were selected but half the number of treatment households. For the selection of households in the treatment group, since the list of beneficiaries were available from HDFC Bank CSR, systematic random sampling was followed. For the selection of households in the control group, simple random sampling was followed.

With respect to the respondent who was administered the questionnaire, preference was given to an adult female in the household who was mostly the one doing the household chores in the house.

Village Level Interviews (Quantitative): A short Village Level Questionnaire (quantitative) was also administered across all project villages in Sidhauli block with the respondent being the VWSC (Village Water and Sanitation Committee) or Pani Samiti member. Banyani village was administratively divided into two areas, as found during data collection. Hence data was collected from each of these two areas. *Hence, the final achieved sample size at the end of the data collection was 19 village level interviews.*

Hence, a summary of quantitative interviews completed was:

Table 2.2 Summary of Quantitative sample size

No. of Households	Sample Size
Household level interviews	610
Village level interviews	19

Qualitative Component: For the qualitative component, Focus Group Discussions (FGD) and Key Informant Interviews (KII) were conducted for gaining deeper insights assessing program impact. These were conducted in treatment villages only. The achieved sample, as decided, for the qualitative sample across different stakeholder was conducted as under:

Table 2.3: Distribution of Qualitative Sample Size achieved

Respondent category (KII)	Sample size
FGD with Beneficiaries	3
Key Informant Interviews (KII): <ul style="list-style-type: none"> • (VWSC/ Pani Samiti/ UserGroup) -VWSC Chairperson/ Member Secretary/ Member x 6 • Women identified for WQMS (Water Quality, Monitoring & Surveillance) x 4 • Village Sarpanch/ VDC Member x 2 	10

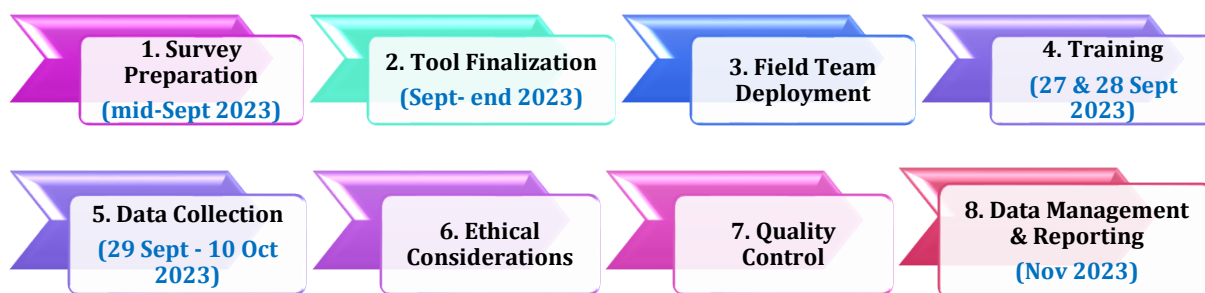
List of FGD/ KII conducted is given in [Annexure 1](#).

2.4. STUDY TOOLS

The research tools developed were aligned with the intervention done under the FDP, with the aim to arrive at quantifiable impact indicators and assessing the project's efficacy, effectiveness and sustainability of outcome. Project related documents were obtained from HDFC Bank CSR to get detailed understanding of the project and hence develop the tools. The quantitative research instruments were structured questionnaires with mainly close-ended questions, enabling capture of responses through pre-defined set of (multiple) response choices and was finalized in consultation with HDFC Bank CSR. The qualitative FGD and KII Guide had questions to help draw qualitative insights in keeping with the scope of the Assessment, with special attention to assessing the project's efficacy, effectiveness and sustainability of outcome.

2.5. STUDY IMPLEMENTATION

The preparation for the Impact Assessment after commissioning from HDFC Bank CSR began in mid-September 2023. One of the important initial tasks was to study the project documents shared by HDFC Bank CSR, for developing an understanding of the project. The study tools were then developed and shared with HDFC team for approval. The CAPI digital scripting was also undertaken in preparation for the field launch in addition to other field level preparation. Field Team Training was held on 27th – 28st September, 2023 at Lucknow for orienting and training the teams on the study protocols and tools. Soon after, data collection was launched from 29th September onwards and completed by the second week of October. This was followed by data processing, management, analysis and preparation of Report which was completed in the month of November.



Water tap installed at Banyani Village



A 'Jal Rakshak' in one of the survey villages



Water Testing Kit



A Parivartan awareness wall painting



Woman filling water from the tap, Sarsauli Village



Water tank at Banyani Village



HDFC Parivartan-AKF piped water scheme board, Sarsauli Village



Quantitative interview in progress



Soak Pit in the project area



Board on Village water and Sanitation Committee, Jataha Village

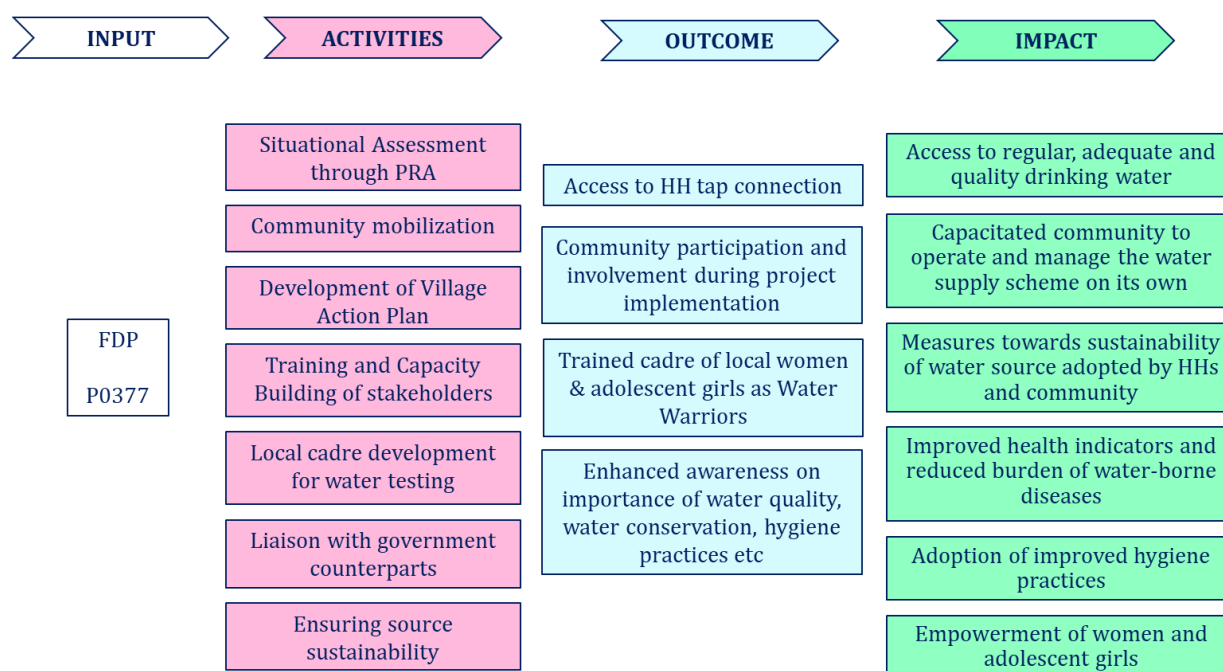
2.6. DATA MANAGEMENT, ANALYSIS AND REPORTING

After completion of data collection, final data collation, checking and cleaning of the completed quantitative interviews were done. Like-wise, transcription and further content analysis was undertaken for the qualitative capsule. Once the data was cleaned, it was analysed and Draft Findings Report prepared on its basis.

2.6.1 ANALYTICAL FRAMEWORK

This Report on the Impact Assessment of FDP P0377 has followed the standard **Outcome-Impact Framework** to analyse and measure the outcomes and impact of the project by way of tracing the changes since the implementation of the project and establishing the causes of these changes. The themes of analysis to be so used are presented in the Figure below outlining the various outcome and impact expected and envisaged as a result of the project intervention.

Figure 2.1: Outcome-Impact Framework applied to FDP P0377



As deduced from the figure above, the project intervention FDP P0377 acted as the input under which various activities were undertaken for providing access to tap water connection in the project area. These *activities* towards inception and implementation of the project by Aga Khan Foundation primarily included situational assessment through PRA, community mobilization, development of village action plan, training and capacity building of stakeholders, local cadre development for water testing, liaison with government counterparts and ensuring source sustainability to ensure the availability of clean and safe drinking water to the households.

As a result of these activities, the immediate outcome included getting access to HH tap connections. The participatory nature of the project ensured community participation. The involvement of women through developing a trained cadre of local women and adolescent girls as Water Warriors was also ensured. Through the awareness programme, enhanced awareness on importance of water quality, water conservation and hygiene was also observed.

In terms of the long-term *impact* that this intervention was expected to bring included increased access to regular, adequate and quality safe drinking water. Community involvement and developing a sense of community ownership by way of capacitating the community was an integral component of the project, empowering them to manage the water supply scheme on their own. Through sensitization, the community was also taught to implement measures that ensured sustainability of the water source by the community. Improved health indicators due to increased access to clean water also helped reduce burden of water borne diseases.

2.7. FIELDWORK CHALLENGES

There were as such no challenges faced by the field team during data collection.



STUDY FINDINGS









CHAPTER 3

Background Profile

The present chapter collates the findings at the beneficiary and household level, giving insights into the overall demographic and socio-economic status of the households surveyed and interviewed.

A total of 610 households were interviewed, of which 410 were Treatment households while remaining 210 were Control households. Respondents interviewed were primarily adult females (88%) given that they would presumably be the ones mostly involved in doing household chores and hence would be better able to give responses around water access and availability. Remaining 12 percent respondents interviewed were males. Average age of the respondents interviewed was 40 years. Households interviewed had an average of 6 members per household.

The social categories of most of the sampled households (92-96%) in each of the two study groups comprised SC and OBC households. About 42 percent of the households in both study groups have BPL or Antyodaya cards. Less than half of the households in the treatment group (48%) and Control group (41%) have APL cards. The rest very few households did not have any cards. The majority of households were pucca or semi-pucca in the treatment and control group with 1-3 rooms including a kitchen. A slightly higher proportion of households having toilets in the treatment group (64%) as compared to that in the control group (58%). Similarly, 76 percent of households in the treatment group and 70 percent in the control group were electrified and around one-fifth of the households were using solar power. Largely, the profile of the treatment and control group households was similar.

HOUSEHOLD PROFILE		
	TREATMENT	CONTROL
 Social Category of HHs		
SC	51%	56%
OBC	41%	40%
General	6%	3%
ST	2%	1%
 Possession of Ration Cards		
APL	48%	41%
BPL	33%	29%
Antyodaya	9%	13%
No Card	10%	17%
 Type of House		
Pucca	50%	41%
Semi-pucca	38%	44%
Kaccha	12%	15%
 No. of rooms including kitchen in the house		
1 room	30%	31%
2 rooms	43%	40%
3 rooms	26%	29%
 Households having toilet		
HHs with toilet	64%	58%
 Households electrified & using solar power		
HHs electrified	76%	70%
Among them, HHs using solar power	21%	22%

CHAPTER 4

Project Outcome and Impact

As outlined in the previous chapters, this particular FDP was focused on the 'ensuring access to clean drinking water' in a decentralized approach to ensure community participation and ownership. The current chapter analyses the key project impact achieved following our analytical framework described in section 2.5.1, assessing the same at the level of outcome level 1, outcome level 2 and impact.

4.1. FINDINGS PERTAINING TO PROJECT OUTCOME

This section analyses the project outcome as outlined in Figure 2.1. These outcomes are the immediate outcomes observed as a result of implementation of the FDP.

4.1.1. ACCESS TO HOUSEHOLD TAP CONNECTION

In the study, it was found that 92 percent of sampled households under the treatment group have household taps installed through Aga Khan Foundation - HDFC Bank CSR as the current primary source of drinking water. Whereas, for 86 percent of households under the control group, the tube well or bore well was the primary source of drinking water.

Figure 4.1 shows that among the Treatment HHs, 78 percent did not have any household tap connection prior to the FDP. In other words, about four-fifth households were considerably benefitted from the FDP by getting a functional household tap connection which they did not have access to earlier. In the absence of a tap connection earlier, tubewell/ borehole was the main source of drinking water for these HHs.

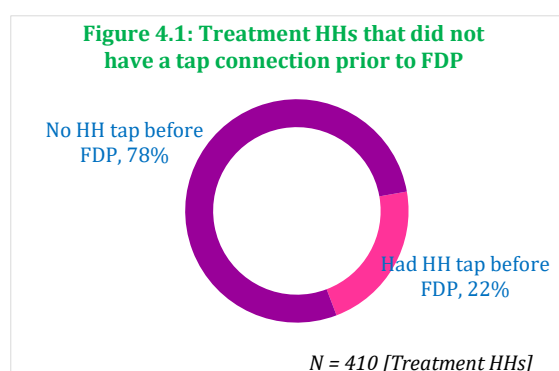
Pertaining to the rest of the 22 percent Treatment HHs (N=92) who did have access to a tap connection prior to the FDP, the water source of the tap was either a public well/ tubewell (56%) or private well/ tubewell (44%). Their primary reason for dissatisfaction with the tap they earlier had was non-functionality of the tap (19%) and non-availability of water (15%) through that tap most of the time. At the same time, three-fifth (59%) of these households who had access to a tap connection earlier, mentioned that they did not have any particular reason for taking the FDP tap connection, and did so since most in their neighbourhood were taking it.

Accessibility of drinking water was a big challenge in the project area before the intervention of the FDP. A few hand pumps and taps, installed by the government, was mostly the source of drinking water for the larger population. There used to be a long queue for collecting water, consuming a minimum time of 15 to 30 minutes. In some of the villages, as mentioned during the focus group discussions, women used to carry

Table 4.1: Current primary source of drinking water for households

Source	Treatment HH	Control HH
Household tap installed through Aga Khan Foundation-HDFC Bank CSR	92%	
Piped water into dwelling, yard or plot	0%	1%
Public tap or standpipe	<1%	13%
Tube Well or Borehole	8%	86%
Base [All HHs]	410	210

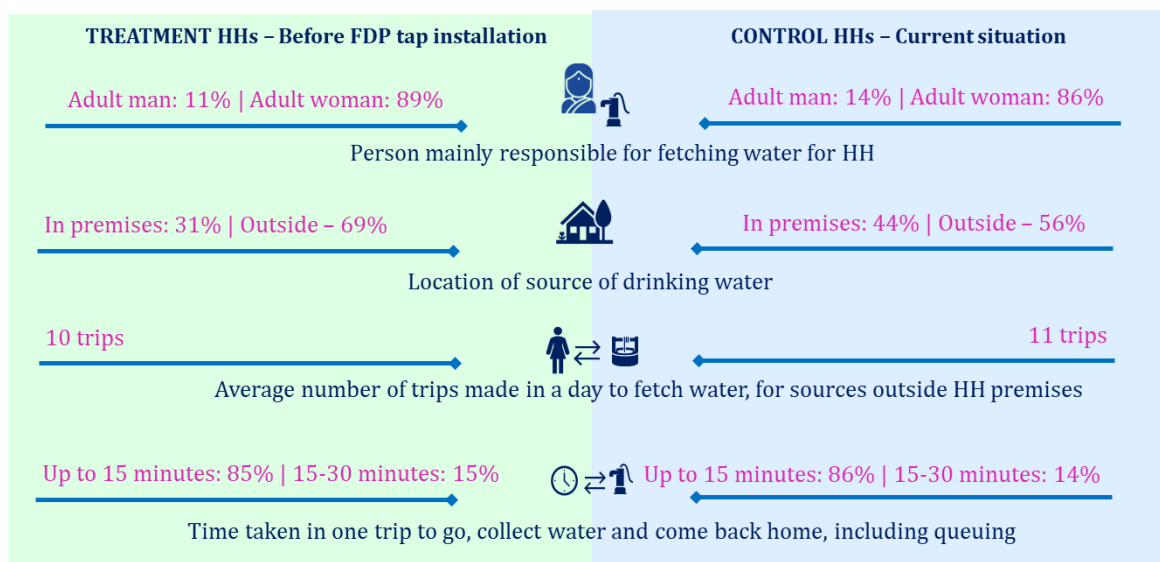
Figure 4.1: Treatment HHs that did not have a tap connection prior to FDP



water from long distances, consuming time of about one hour. The intervention of the project, resulted in drinking water facility through household taps connected by water tanks.

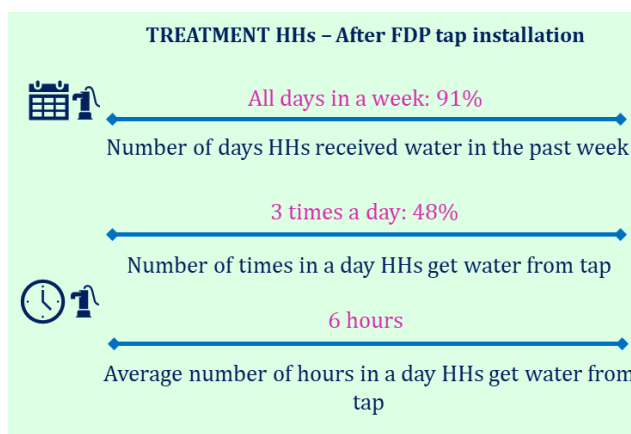
“The best part of it is that our women members are getting free water 24×7”.

- Beneficiary, Devhara

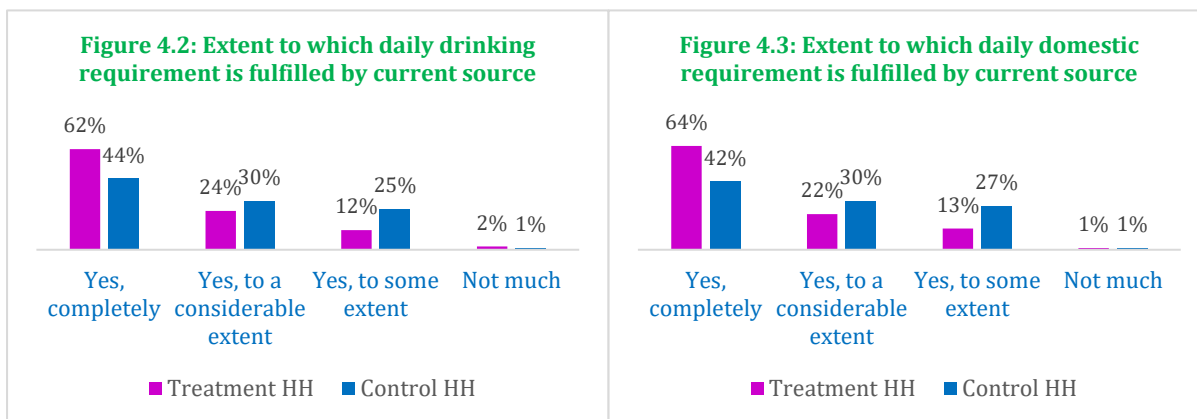


As illustrated in the infographic above, it is shown that before the installation of the household tap, in the treatment group, a very high proportion of women (89%) were responsible for fetching water for the household from the source that was mostly located outside. Similarly, this proportion is currently high (86%) in the control group. Women took up 10 to 11 trips a day with a round trip duration of mostly up to 15 minutes both in the treatment group, before the installation of household taps and control groups at present to fetch water from the water sources located outside the premises.

As seen in the infographic beside it shows that, in the past week, 91 percent of households under the project (treatment group) received water all 7 days a week. It was reported that 23 percent of treatment households received water from the household tap at least once a day, 5 percent of households received water twice a day, and 72 percent received three times or even more in a day. The average duration of the water supply in households under the project was reported to be 6 hours per day.



As brought out from the qualitative assessment, after the installation of household taps under the FDP, the time spent on collecting water has reduced, which is a great relief for the people, especially the women members of the community, who traditionally had the role of collecting water. The saved time is now used for other activities like working in the agriculture farm, taking care of the livestock, maintaining personal hygiene or just relaxation in the house.



Further, Figure 4.5 shows that, as high as 62 percent of households in the treatment group and 44 percent of households in the control group reported their daily *drinking* requirements being “completely” fulfilled by the current source of water. Similar proportion of households under both groups reported their daily *domestic* requirements being “completely” fulfilled by the current source of water.

This goes on to suggest that majority of the treatment households have indeed been benefitted through access to household tap connection under the FDP and fulfilment of both their drinking and domestic water requirements, as compared to the situation among the control households.

Not only has the access of water in households increased, but the volume of water consumption has also increased. Earlier when only one bucket could be made use of for a particular purpose, now two buckets is used for the same. As water is available at the press of a button, both availability and accessibility of water has increased. The people find this arrangement very convenient and they are very happy with the entire set-up.

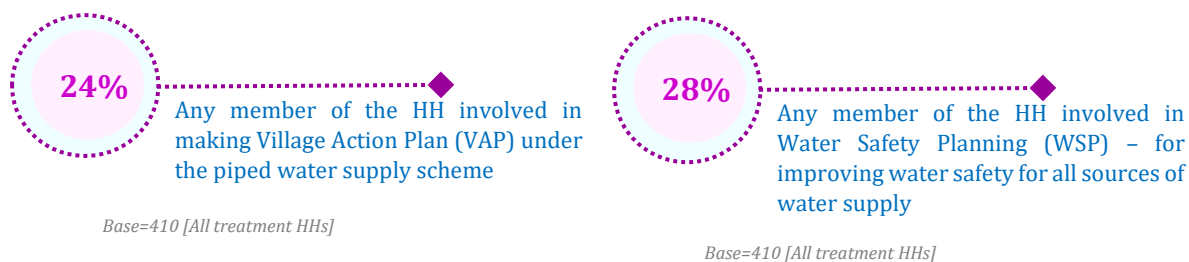
“Earlier there was struggle to collect water, but now water is available with just a switch of the motor”

– Beneficiary, Mirjapur

4.1.2. COMMUNITY PARTICIPATION AND INVOLVEMENT DURING PROJECT IMPLEMENTATION

Village Water Sanitation Committee (VWSC)/ Pani Samiti were constituted in almost all villages as part of the rural piped water supply scheme of Aga Khan Foundation (AFK)-HDFC Bank CSR. In the representation of minority groups, such as women and SC/ST members in the VWSC, 17 out of 19 villages obliged. 84% villages had the active participation of VWSC and community members during social and resource mapping. The Gram Panchayat was satisfied with Detailed Project Report (DPR) prepared by AKF in all the villages. Further, in the preparation of the Village Action Plan, all villages were helped by Aga Khan Foundation.

Villages having VWSC/ Pani Samiti constituted as part of rural piped water supply scheme	17/19
Villages having VWSC members comprising of women and SC/ ST category	17/19
Active participation of VWSC and community members during Social and Resource Mapping	15/19
Gram Panchayat satisfied with Detailed Project Report (DPR) prepared by AKF	19/19
VAP prepared by Gram Panchayat with help from AKF	19/19



Further, around one-fourth of households in the treatment group reported the involvement of any member of their households in making a village action plan (VAP 24%) under the piped water supply scheme and water safety planning (WSP 28%) for improving water safety for all sources of water supply.

Through qualitative insights, it was highlighted that the community participated in the participatory exercises before the inception of the project. A Social and Resource map (of 8 ft. × 8 ft. dimension) depicting the existing water resource infrastructure of the village was prepared in participation of all community members. The Social and Resource map was finally used for preparing a Village Action Plan (VAP), depicting a layout of the water supply scheme. The people themselves sat down and analysed about the ideal location of the water tank, so that coverage to all colonies is made possible.

“We did not opt for road in the Village Action Plan, but we chose water supply because it is a permanent need for us”

– Beneficiary, Devhara village

Owing to the participatory nature of the project, the members of the community participated in the construction of the piped water scheme. Out of the treatment HHs surveyed, 5% (N= 20) contributed in the construction. Out of this, 45% made contributions in the form of labour, 40% in cash and 15% in kind/materials (such as sand, stones). The qualitative inputs also brought out that the members of the community participated in the clearing off the land for establishment of the water structure and the distribution of the pipes.

5% treatment HHs contributed in the construction of during the implementation of the piped water scheme in their village

Contributions made in:

Labour – 45%

Cash – 40%

Kind/Material (like sand, stone) – 15%

In the interview with village representatives from the VWSC/Pani Samiti members, it was brought out that through the training received and participation encouraged under the FDP, the intervention ensured that the programme is community led and managed.

Table 4.2: Training received by village representatives to ensure the scheme being community-led and managed

Training received	No. of villages	Training received	No. of villages
Developing by-laws of VWSC	14/19	Training of plumbers and masons	18/19
Record keeping of user-charge collection	13/19	Usage of Field Testing Kit	17/19
Fixing the user charges	13/19	Monitoring of performance of water source	15/19
Calculation of water tariff	12/19	Monitoring of performance of water supply system	15/19
Training of pump operators	17/19	Monitoring residual chlorine level in water	15/19

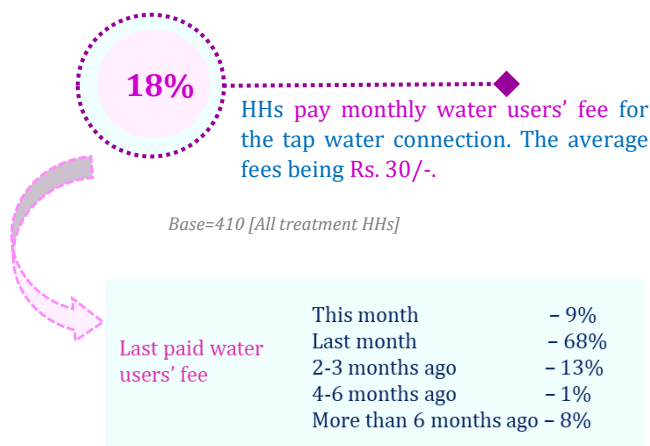
Table 4.2 brings out the various arenas in which training was received by village representatives to ensure the scheme being community-led and managed. However, households’ awareness on training being given to panchayat members/ Pani Samiti members for operation and management of water supply system for the scheme to be completely community led and managed is 45 percent.

In 14 out of 19 villages, user charges and water tariffs was decided by the Gram Sabha, this was further decided through the assent of the community members. In the initial meeting it was proposed that each household will contribute Rs. 500 for connection or installation charges. The user group members also collectively decided to fix a monthly charge or water tariff of Rs. 20 to 30 from all households, segregated for the purpose of creating a fund to take care of repair and maintenance needs. The collected money was decided to be operated by three chosen executive members from the group.

User charges and water tariff decided by gram Sabha and agreed by community members



In the beginning, only 7 percent treatment households confirmed to have paid the initial amount to the Jal Prabandhan Samiti (JPS) towards tap connection fees. Currently, however, the proportion of HHs that pay monthly water users’ fee for the tap water connection is 18%. Among the remaining 82% of the households have reported not paying the monthly user fee, over four-fifth said that they had no information on monthly user fee or about its payment/ no one came to collect the fee or ask for it/ that it was a free service. The average water user fee the households pay to the Jal Prabandhan Samiti is Rs. 30.



Majority of the HHs that ever-paid water users fee and were not able to pay the fees for 2 months or more stated that they did not receive the bill (71%).

- Of the remaining 82% who do not pay monthly water users fee, majority stated that they had no information on monthly water users fee (76%).

It can be interpreted here that the collection of the connection and monthly tariff changes among users is, not regular in all locations. There is therefore a need to bring more group consensus on the charges, especially connection changes, levied among the members.

As the FDP worked in line with the guidelines envisaged by the JJM, 17 out of 19 VWSCs were given training in the key components of the JJM. In 11 out of 19 villages, the handover ceremony was conducted, to handover the water structure to the Gram Panchayat by the AKF team. At the handing over, 5 out of 19 villages received the Har Ghar Jal certificate signed by the Panchayat secretary.

VWSC given awareness and training about key components of JJM



Handover ceremony was conducted at the end of the project



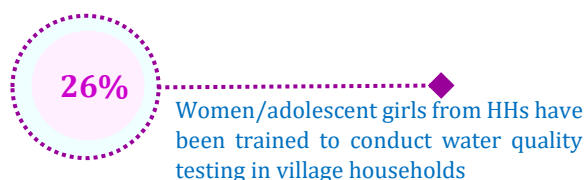
Har Ghar Jal certificate signed by the Panchayat Secretary



4.1.3. TRAINED CADRE OF LOCAL WOMEN & ADOLESCENT GIRLS AS WATER WARRIORS

Overall, 36 percent of the households in the treatment group were aware of women/ adolescent girls in the village, known as Water Warriors, who are responsible for checking the quality of water from this piped water scheme. Of them 69 percent HHs confirmed water being taken from their HHs by water warriors for water testing and all confirmed of their water being declared fit for drinking.

About 10 in 19 villages confirmed that at least 5 women/adolescent girls been given training in the monitoring of water quality through Field Test Kits. At the household level, about 26 percent of those in the treatment group reported that any women/adolescent girls from their household had been trained under this project to conduct water quality testing in village households.



Base=410 [All treatment HHs]

The *Jal Sakhi* program is also being implemented in the villages. As part of this program female members have been included in the committee meant for water quality monitoring and surveillance. These five women committees are presently engaged in spot testing of water quality with a field testing kit. They have even done verification in the villages where piped water system has been installed. There is a need for more involvement and training of local women for implementing this program.

“Women members conducted water quality test in our village, and they even informed us about the result along with relevant suggestions”

- Beneficiary, Devhara

Data from the village and household level is encouraging with respect to the practices adopted for monitoring water quality through Field Test Kits. However, at the same time, it points towards the continued emphasis on awareness generation of data quality testing that would go a long way to further improve the outcome of water quality monitoring.

In 17 out of 19 villages, water testing was done once or twice in the past year.

After receiving training under the FDP, the *Jal Sakhi* team tested the quality of water using the prescribed method in their defined area. The result of the water quality testing was shared among the users. In case of negative water quality result of the source, the *Jal Sakhi* team members informed the users. They provided suggestion to these users for usage of water for purposes other than drinking. Additionally, some remedies like boiling of water, adding alum and lime to water were also communicated by the *Jal Sakhi* team members. After getting the knowledge about contamination of the drinking water, few of the people shifted their water collection source.

Number of times water testing has been done in village HHs



Some of the *Jal Sakhis* faced challenges during the process of water quality testing. Many a time people used to question a lot about the relevance of the exercise; few used to object and stop their operation, which hampered the progress. This can be because of the fear of negative water quality result of their drinking water source and the possible embarrassment among the people. To counter objections, the *Jal Sakhi* team members used to explain about the purpose of the water quality testing, and its linkages with the health or well-being of all. Only after getting fully convinced, the people used to allow the collection of sample of water and subsequent testing. In spite of few obstacles, by and large, the people took this exercise in a

positive spirit. They participated in the exercise and did a follow-up about the result of the test. During the interview, one of the *Jal Sakhis* comments that everyone wants to live a healthy life and no one wants to drink impure water and get ill.

"There were many people who stopped us...but we convinced them that this exercise is meant for their good health"

- *Jal Sakhi member, Bibipur village*

4.1.4. ENHANCED AWARENESS ON IMPORTANCE OF WATER QUALITY, WATER CONSERVATION, HYGIENE PRACTICES ETC

As part of this FDP, project villages were given training and awareness around importance of water quality, water conservation and maintaining appropriate hygiene practices.

The Assessment gathered data on recall of households on various training, information and awareness they would have received during the intervention around importance of quality drinking water, conservation of water resources, hygiene practices and their role in managing the piped water scheme as a community. The data for this is depicted in the infographic above. As observed, a fairly high proportion of households in the treatment group reported having received any information or awareness on various aspects (63 to 80%) of the piped water supply scheme from Aga Khan Foundation-HDFC Bank CSR. It also included information on the importance of water quality and water conservation.

Also, with respect to maintaining cleanliness and practicing good hygiene practices in daily life, the awareness received by over 80 percent of the treatment households from Aga Khan Foundation-HDFC Bank CSR on various aspects.

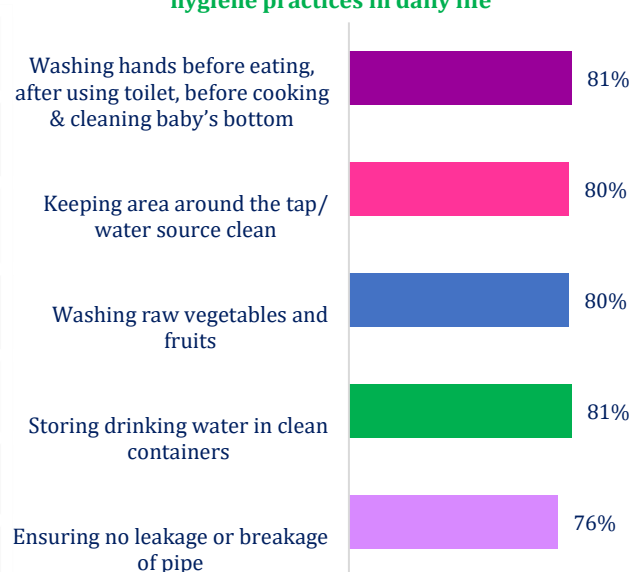
The above situation indicates treatment households received a lot of information on various aspects including the importance of water quality, water conservation, maintaining cleanliness, and practicing good hygiene practices in daily life.

Figure 4.4 Training or awareness received by treatment HHs on various aspects



Base=410 [All treatment HHs]

Figure 4.5 Awareness received with respect to maintaining cleanliness and practicing good hygiene practices in daily life



Awareness about measures like boiling of water for drinking purpose, use of contaminated hand pump water only for washing clothes etc. was also provided under the FDP. The practise of hand wash, regular bathing and general hygiene among the people has increased. These practices can be the result of availability of water through taps and regular awareness programs, especially after the spread of Covid-19. This has commonly resulted in an atmosphere of hygiene and cleanliness inside the house.

“Now people wash hand more often”

– Beneficiary, Mairjapur village

4.2. FINDINGS PERTAINING TO PROJECT IMPACT

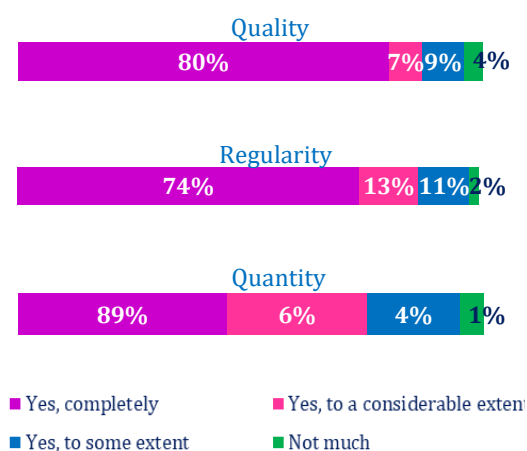
This section analyses the project impact as outlined in Figure 2.1. These impacts are the long-terms ultimate impacts as a result of implementation of the FDP.

4.2.1. ACCESS TO REGULAR, ADEQUATE AND QUALITY DRINKING WATER

One of the key and main impacts of the FDP was to provide its beneficiaries with access to regular, adequate and quality safe drinking water. In this regard, nearly three-fourths of treatment households reported to be completely satisfied with the regularity of drinking water supplied, 89 percent with the quantity of water supplied, and 80 percent with the quality of water supplied. This could be further supported by village level information according to which three-fourths of villages were reported to be receiving adequate quality of water supplied regularly.

On being asked whether in the past one year, water was available to households in sufficient quantity whenever needed/ all through the year, 89 percent treatment households and 94 percent of control households responded in the affirmative. However, even though a marginally lower proportion of treatment households as compared to the control households reported water availability in sufficient quantity, the difference between the two groups was not found to be statistically significant.

Figure 4.6: Extent of satisfaction of Treatment HHs with water quality, regularity and quantity



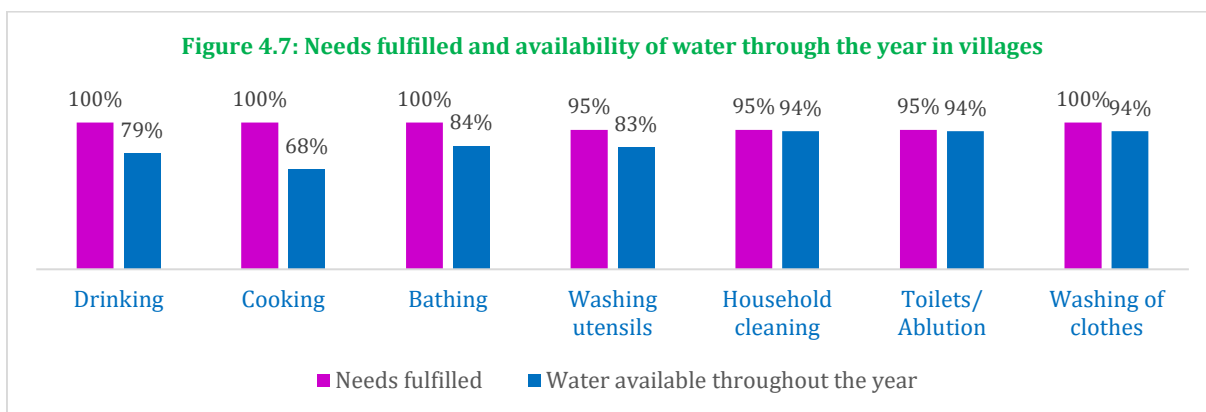
TREATMENT	CONTROL
HHs with sufficient quantity of water whenever needed/ all through the year	
89%	94%
Average daily water consumption of HHs in litres	
295	268
Average daily water consumption of HHs before installation of tap in litres	
241	-

On an average, treatment households currently consume 295 litres of water in a day, which is an increase by 22 percent from the earlier consumption of 241 litres per day before the tap installation under the FDP. Given that the average household size is 6 members, current per capita water consumption is 49 litres per

capita per day, an increase from 40 litres per capita per day. While the current water consumption in treatment households is slightly behind the JJM mandate of ensuring access of piped water supply of 55 litre per capita per day for every rural household, the increase in amount of water consumed as compared to prior the FDP tap installation is statistically significant which showed a median increase in water consumption (285 litres) when households accepted the intervention compared to before the intervention (200 litres).

For the control households, the average current daily water consumption stands at 268 litres or 45 litres per capita per day. This, when compared with the treatment households' current water consumption shows statistically significant results, here again, implying that the increased water consumption in treatment households is not a matter of random chance, attributable here to the intervention done and access to tap water provided under the FDP.

As per the village-level survey data, villagers have almost all water needs (drinking, cooking, washing clothes or utensils etc) now shifted to the installed household taps, as compared to using groundwater or surface water to fulfil those needs earlier. This shift was reported to be "throughout the year" for all major water needs (68-94%) when enquired about the duration for which shift was made to the tap.



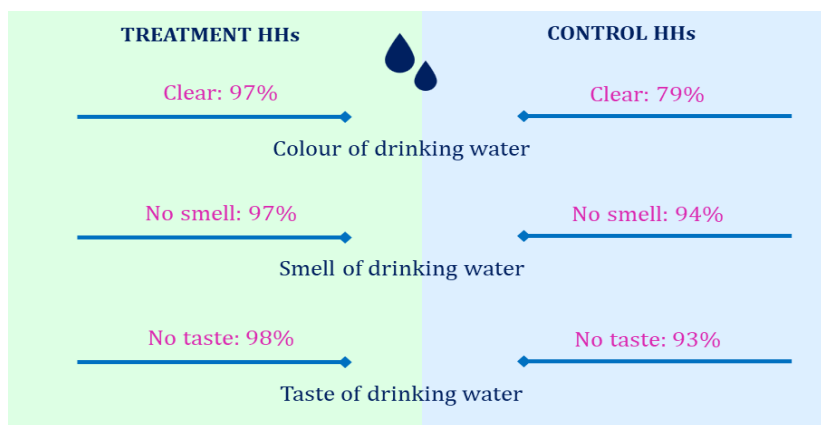
Moreover, the quality and potability of water were rated as "good" by a higher proportion of households in the treatment group than in the control group, which in both cases was statistically significant.

Villagers were earlier mostly using hand pump water installed by the government for drinking purpose. Unfortunately, water from these sources was predominantly not clean, with visibility of yellowish colour and few insects. There were also experiences of foul odour smell from water. In taste wise, hand pump water was quite hard and heavy. The FDP ensured clean drinking water for all. The beneficiaries, during the discussion, informed that verification of the quality of water was done through quality test pre and post installation of the taps. The quality of tap water was reported to be good.

	TREATMENT	CONTROL
HHs rating on water quality of current source		
Good	92%	80%
Acceptable	8%	19%
Poor	<1%	1%
HHs rating on water potability of current source		
Good	91%	69%
Acceptable	9%	30%
Poor	<1%	<1%

"The quality of household tap water is good...the taste is quite light, and is in sharp contrast to hand pump water which tasted heavy"

- Beneficiary Sitapur village



Moreover, over 97 percent of households in the treatment group reported that the water received from the household tap was clear, with no smell and no taste. In the control group households, a slightly lower proportion of households reportedly drink water that is clear (79%), with no smell (94%) and no taste (93%). Barring a few, all households in treatment (96%) and control group (98%) reported that they do not treat water before drinking. Assessing whether there was any relationship between group membership (treatment or control households) and the quality of drinking water that these household use in terms of colour, smell and taste, respectively, statistical tests were performed. Results showed statistically significant results though with small association between group membership and colour of water as also group membership and taste of water. This goes on to suggest that the difference in water colour and taste seen between the treatment and control households is something other than random chance, which in this case can be attributed to the quality of water supplied in the treatment households under the FDP. No statistically significant results were found for smell of water though.

Keeping in context the continued supply of clean water, data was gathered from villages to assess the functioning of the automatic chlorine dozer since installation and also of the solar panel installed on the water tank. Of the 19 villages, 13 of them, that is, over two-third project villages mentioned that the automatic chlorine dozer has been functional since inception, while for 5 villages it had mostly been non-functional and in 1 village, the respondent could not provide this information. Among the latter 5 villages, 2 villages had also taken action to get it repaired. Further on, with respect to the functionality of the solar panels for pump operation since installation, 17 out of 19 villages answered in the affirmative.

4.2.2. CAPACITATED COMMUNITY TO OPERATE AND MANAGE THE WATER SUPPLY SCHEME ON ITS OWN

One of the important objectives and aim of the FDP was to capacitate the community such that they are able to operate and manage the water supply scheme on their own, having in place a system to ensure smooth operation of the scheme along with mechanism for compliant redressals if and when they arise.

About half the villages, 9 in 19, reported that their village did have a complain grievance mechanism in the village, in case of complains from households with regard to the tap installed under this scheme. Jan Choupals to discuss water service-related issues had been conducted twice or more in the past 1 year in 4 out of 19 villages, though for another 13 villages, it had been conducted once.

Villages having a complaint grievance mechanism in the village

9/19

Villages that conducted Jan Choupal twice or more in the past 1 year

4/19

Of the households that know whom to approach for repairs of HH tap water connection, more than two-thirds (69%) said that they would approach the Gram Pradhan followed by 24% who mentioned of approaching the member of Pani Samiti. Another 6% said they would approach Water Warriors, and <1% said they would approach plumber/ mason trained under this project.

HHs who know whom to approach for repairs of HH tap water connection

35%

HHs required any repair since installation of HH tap connection

6%

Base=410 [All treatment households]

Of the 6 percent or 26 households that required any repairs of tap connection since its installation, 39% got it repaired within 2-3 days, 19% in 1 day, the rest of them (42%) got it repaired in more than 3 days. Hence, the repair work had usually taken a maximum of 3 days for majority households, with 2 in 3 households reaching out to the Gram Pradhan for redressal.

Further, in 12 out of 19 villages, post installation of taps, a pump operator was allotted in the village for the water system.

Pump operator allotted in the village for the water system

12/19

In nearly two-thirds of the villages in the treatment group, it was perceived that the community was equipped to a very large/large extent to monitor and maintain the functioning of the water system in the future. Village representatives from 9 in 19 villages also mentioned that the involvement of community members has made them responsible to a large/ very large extent for their own water security needs. Villages also reported that it is important for communities to be able to manage such schemes on their own. While villages mentioned that they are yet to experience any major repair work in the system, some of the minor repair works are being handled by the community members themselves, individually or in small group. Additionally, it was reported that the designated bank account of the committee has not being opened yet. Thus, the collection of tariff money has not been initiated. A proper follow-up in this regard requires to be undertaken. Presently, grievances regarding any issues for irregular functioning of the group mechanism or system is being unheard. One of the interviewed Sarpanch commented in disappointment that the prepared plan was good and participation of the community members was achieved, but the plan was not implemented in a proper manner, leading to less quality work and less coverage of household in the village.

"Villages are self-sufficient in managing the water supply"

- VDC member Bhagwaipur village

Further, about 87% thought that use of solar panels for running the water supply scheme in their village, instead of electricity/ diesel, leads to lesser users' costs for households.

4.2.3. MEASURES TOWARDS SUSTAINABILITY OF WATER SOURCE ADOPTED BY HOUSEHOLDS AND COMMUNITY

In over two-thirds of villages, it was opined by village representatives that there has been an increase in the community's awareness about environmental sustainability through efforts towards wastewater management.

Overall, 29 percent of the treatment households reported having received the training on rainwater harvesting. Of the HHs that received this training, 23% established a rainwater harvesting system in their household.

Treatment HHs received training in rainwater harvesting

29%

HHs adopted any practices for reuse of household waste water

2%

Base=410 [All treatment households]

Only 2 percent of the HHs adopted any practices for the reuse of household waste water from kitchen, bathroom, clothes or utensils wash. Among these HHs that adopted any practices for reuse of

household waste water, 5 households use it for construction of recharge soak pits, 3 households use that water in kitchen garden and 1 household use it in construction of leach pit.

"We have been made aware about the importance of harvesting of waste water"

- Beneficiary, Devhara

Based on village level interviews conducted with VWSC or Pani Samiti member, 7/ 19 or 37 percent villages reported that their VWSC or community received training for management of waste water. In some of the villages few people have also planted trees like Papaya, which automatically gets irrigated by the waste water. On being asked to what extent have households in their village taken measures for waste water management, the uptake was reported to be lower with only 2 villages reporting that about half the households in their village have adopted such measures. Another 7 villages reported adoption by very few households while remaining 10 villages reported that hardly any households have done so.

Table 4.3: Training and practices of VWSC and community on water conservation and source sustainability

Training received	No. of villages
Received training for management of waste water	7/19
Received training in rainwater harvesting	5/19
Villages where any HHS have constructed soak pits	3/19
Received training in monitoring water level and quality	8/19
Villages have observation well for monitoring water level	2/19

Further, 5/ 19 or 26 percent villages confirmed their VWSC or community to have received training in rainwater harvesting. Through training in water conservation, the community members were given training in installation of soak pits.

Over two-thirds of villages did confirm of increased groundwater table of their village due to training in water sustainability and

Training in water sustainability and conservation has led to increased water table in village

13/19

conservation. However, at the household level, awareness of any formal and specific training on rainwater harvesting and water reuse is noticeably low. They all agree that rain water harvesting, water absorption tanks or pits are important measures for ground water recharge. However, uptake and adoption of these practices at the household level is lower. It implies that further training would have a triggering effect on their awareness and practices in the area of water conservation and sustainability.

4.2.4. IMPROVED HEALTH INDICATORS AND REDUCED BURDEN OF WATER-BORNE DISEASES

The village survey indicated that nearly three-fourths of the villages reported that there had been a decreased incidence of waterborne diseases such as cholera, dysentery, diarrhoea, typhoid etc. in their community, after installation of taps in people's households.

There were reports of low quality of drinking water, in the form of yellowing content, from the earlier used public hand pumps. Things have changed after installation of the system. The availability of clean drinking water has reduced the chances of water borne diseases like malaria, typhoid and dysentery.

In the past 6 months, both treatment and control households reported similar as also lower incidence of most waterborne diseases (21-49%), affecting

	TREATMENT	CONTROL
HHS having affected by diseases in the past 6 months		
Diarrhoea	21%	20%
Dysentery	10%	9%
Cholera	<1%	<1%
Typhoid fever	49%	49%
Malaria	31%	30%
Hepatitis A	<1%	1%
Arsenocosis	0%	<1%

primarily the women aged 18 -50 years, with no significant difference between the two types of study groups.

In the last one year and after implementation of the FDP, treatment households reported spending an average of Rs.6541/- for treatment of water-borne diseases. This amount was 9 percent lower than the earlier amount of Rs.7165/- which they used to spend before getting access to potable water through the FDP. The difference in expenditure for the treatment households before and after the FDP was statistically significant indicating an impact of the FDP.

HHs average expenditure for treatment of water borne diseases in the last one year		
	TREATMENT	CONTROL
Average expenditure	Rs. 6541/-	Rs. 5983/-

Treatment HHs average expenditure for treatment of water borne diseases *before* installation of tap - Rs. 7165/-

For the control households, the average expenditure on treatment of water-borne diseases was Rs.5983/-. The difference between control and treatment households in this regard did not produce statistically significant results.

About 79 percent of the households in the treatment group reported that the incidence of such water-borne diseases has reduced in their family due to the use of clean tap water installed under this piped water scheme. Of these, 97 percent of households perceived that the cost of treatment for such water-borne diseases therefore also reduced. This may be seen as a major impact of the installation of household taps.

4.2.5. ADOPTION OF IMPROVED HYGIENE PRACTICES

Assuming tap water availability facilitates hygiene practices, a set of questions was asked to assess the adoption of improved hygiene practices at the household level which is a key measure to assess the incidence of water borne diseases as well.

Except for a very few households, almost all households in the treatment and control group reported their all members washing their hands “before food preparation”, before eating /feeding children, and “after defecation”. A fairly high proportion of households also in both

	TREATMENT	CONTROL
Practice of washing hands before/ after any activity		
Before food preparation	93%	90%
Before eating/ before feeding children	99%	100%
After defecation	100%	99%
After cleaning babies' bottoms/ disposal of children's faeces	51%	50%
After contact with animals	75%	68%
After contact with soil or dirt	88%	87%

study groups also reported hand washing on other critical occasions like “after contact with animals” and “contact with dirt”. However, as low as only half of the households reported that the members of their household wash their hands “after cleaning babies' bottoms/disposal of children’s faeces”.

Over 90 percent of household members in the treatment and control group wash their hands with soap/liquid hand wash after defecation/before eating. The majority of the households in both study groups reported hand washing in the “dwelling” itself and water and soap were available at the place of hand washing and the “water storage container was covered” at the time of the survey.

The majority of the households having toilets in both study groups were using toilets. Most of those who were not using it reported that they had a habit of going out.



As regards the usual disposal of the stool passed by your child, slightly over one-fourth of treatment households reported that they throw the child’s stool into the garbage or put/rinse into the toilet. The practice of usual disposal of the stool passed by the child in control group households was the same and was not much different from that of treatment group households.

Hygienic and clean habits like regular hand wash are being regularly practiced after the availability of water through household taps. Thus, the focus on cleanliness has increased.

“People have now started washing their hand more frequently”

- VDC member, Bhagwaipur village

11 of 19 villages or 58 percent reported that there has been a positive change to a very large/ large extent in the community through training sessions on sanitation and maintenance of hygiene.

4.2.6. EMPOWERMENT OF WOMEN AND ADOLESCENT GIRLS

Women empowerment in this context was measured in terms of perceived reduction in the drudgery of women and girls in fetching water, their perceived enhancement in capacity and leadership through their involvement in water testing, and the increase in their participation in village activities and sharing their opinions through their involvement in the piped water scheme.

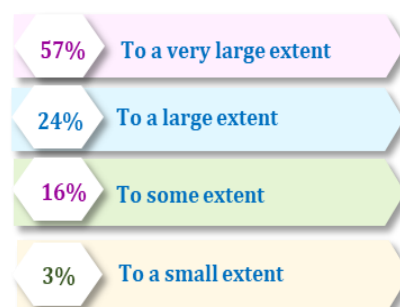
A large proportion of the households (81%) in the treatment group reported that the installation of taps reduced the burden to a very large/large extent for HH members especially women, in time and effort otherwise spent in fetching water.

About 43 percent of households in the treatment group perceived that women/adolescent girls’ involvement in water testing has enhanced completely/to a considerable extent their capacity and leadership.

Nearly 45 percent of households in the treatment group reported that the involvement of women in this community-managed piped water supply scheme has helped them completely/ to a considerable extent to participate more in village activities and share their opinions. Almost similar findings were reported by village survey where it was perceived that the involvement of women as Water Warriors has led to the capacity building and empowerment of women to a very large extent (47%) and some/small extent (53%).

In the qualitative assessment done with Village Sarpanchs, they resonated the crucial role of women members in the water user committee. They believe that it is necessary to incorporate women members in the

Extent to which the installation of taps reduced the burden for HH members especially women, in time and effort otherwise spent in fetching water



Base=410 [All treatment HHs]

Figure 4.8: HHs that think women/ adolescent girls’ involvement in water testing has enhanced their capacity and leadership



Base=410 [All treatment HHs]

Figure 4.9: Extent to which women respondents think involvement of women in this community managed piped water supply scheme, has helped them to participate more in village activities and share their opinion



Base=366 [All women respondents of treatment HHs]

- Yes, completely
- Yes, to a considerable extent
- Yes, to some extent
- Not much
- Don't know/ Can't say

committee because of the larger role played by women for water collection, usage and management at household level. Also, women members can powerfully bring in the aspect of cleanliness and hygiene as compared to their male counterparts. Therefore, steps have been taken for more participation of the women in the functioning of the system.

“Inclusion of women in the committee will help in their empowerment”

– Sarpanch, Bersapur village

CHAPTER 5

Effectiveness, Efficiency and Sustainability of the FDP

This chapter discusses the program interventions against parameters of effectiveness, efficiency and sustainability.

5.1. EFFECTIVENESS

The FDP was aimed at ensuring that households in the intervention area have access to safe drinking water through the Functional Household Tap Connections. With the installation of tap connection, there has been an increased access of project households to potable drinking water as compared to earlier. The effectiveness of the intervention could have been further enhanced had more number of households within the same villages were brought under the benefit of the FDP.

The project has effectively ensured the participation of the community through inception to completion. As the maintenance of the water structure was intended to be self-sufficient, the community has been empowered in maintenance of the structure through understanding the mechanism of the structure, its management and operation, maintenance of water quality and ensuring sustainability of water source.

One of the key objectives of the project was the increased adoption of appropriate hygiene and sanitation practices. Respondents have reported that there has been a positive trend towards the maintenance of hygiene among the members of the community. Due to the availability of water in a closer proximity, hand-washing practices have bettered. For the maintenance of hygiene, efforts have been taken at maintaining the hygiene of the water tanks through thorough cleaning of the tank. All of this also led to a significant decrease in expenditure incurred towards treatment of water-borne diseases.

Conservation of water through awareness and training was an essential objective of the programme. The awareness programmes have effectively ensured a positive change towards conservation of water resources. Efforts for the establishment of water harvesting structures have been initiated in some households though there is scope for further enhancement in uptake. This is apparent from the reports of raised groundwater level in many villages.

5.2. EFFICIENCY

The efficiency of the project can be deduced from the time bound manner in which the project was executed within 1 year, right from the conduct of situational assessment to final handing over to the villages. As intended in the planning, the community was involved in the selection of the area where the water structure would be established. Before the establishment of the water structure, the community was involved in cleaning and clearing out the land area where the tank had to be installed. The members of the community were involved in the construction of the water structure and digging of the pipeline as well.

The establishment of the role of women warriors for the monitoring of water quality attests to the efficiency of the project through which the women of the community have not only been given an essential role for ensuring good quality of water but also empowered their roles in the community.

5.3 SUSTAINABILITY

As envisaged, to ensure the technical and financial sustainability, the intervention was designed to ensure the involvement of the community from the inception period to the completion. At the inception, the community was mobilized. They were involved in the social and resource mapping, to understand the existing water resource in the village, the placement of the overhead tank and the layout of the distribution pipes to ensure maximum coverage. At the initial meetings, the installation fee of Rs. 500 was decided along with a monthly tariff to be collected by the Jal Prabandhan Samiti. In some villages, it has been reported that there is a gap in the mechanism of payment for the water structure. In some intervention areas, no initiatives have been taken to collect money for installation and tariffs. The unavailability of funds will pose as a challenge for the sustenance of the maintenance of the water structure by the community.

The women identified as water warriors have been given training in the monitoring of the water quality through the field testing kits. Women have been able to administer their role to some extent by performing water quality tests in some places. However, there are gaps in the conducting of the water testing at the villages. Women are unable to conduct the water testing in some areas, as they face challenges of credibility in testing the water at the households. In case of any need for repair or discrepancies in water quality, there is scope for further strengthening the redressal mechanism for the same. In the implementation areas, the need for a large repair of the water structure has not come up yet. In the event that there is a requirement for any minor repairs, the community has been able to take it up on their own and make the repairs on their own.

The water structure is largely being operated by solar panels to ensure the reduced usage of electricity and the usage of sustainable means of energy. Additionally, efforts to ensure the sustainability of water source through increased awareness on water conservation methods such as rain-water harvesting and grey water management has been undertaken at the intervention areas. Reports of rejuvenation of the water structure through raised ground water level has taken place. This is an essential step towards ensuring sustainability of the water source.

CHAPTER 6

Summary and Conclusion

The Impact Assessment on accessibility and availability of safe drinking water and related health impacts under FDP has highlighted considerable positive impacts on the rural households of the Sitapur district of Uttar Pradesh.

The study finds that the rural household benefitted from the taps installed through HDFC Bank CSR-AKF by getting functional household tap connections. The project gave due importance to the participation of household members right from its inception, training cadre of local women and adolescent girls for monitoring quality of water field test kits, enhanced awareness of the importance of maintaining water quality, water conservation and hygiene practices, the satisfaction of project beneficiaries about regularity, quality, and quantity of water supplied, increased consumption of water, reduced expenditure on water-borne diseases and empowering and capacitating women/ adolescent girls through their participation and involvement. The project has definitely added to the efforts of the district government in scaling up of the proposed models to increase rural communities' access to functional household tap connection (FHTC), as envisaged under JJM. The summary and conclusion of the findings are as below:

6.1. SUMMARY OF FINDINGS PERTAINING TO PROJECT OUTCOME

6.1.1. ACCESS TO HOUSEHOLD TAP CONNECTION

Getting a functional household tap connection under the FDP was of considerable benefit particularly for about four-fifths households in the project villages, given that they did not have a tap connection earlier, and had to depend on tubewell/ borehole as the main source of drinking water. Household taps installed under the HDFC Bank CSR- Aga Khan Foundation initiative today serve as the primary source of drinking water for over 9 in 10 households. In the past week, 91 percent of households under the project (treatment group) received water all 7 days a week. The average duration of the water supply in households under the project was reported to be 6 hours per day, with close to three-fourth receiving water three times or even more in a day. The majority of the treatment households have indeed benefitted through access to household tap connections under the FDP and fulfilment of both their drinking and domestic water requirements, as compared to the situation among the control households. Not only has the access of water in households increased, but the volume of water consumption has also increased. Access to taps has also greatly benefitted the woman who were primarily responsible for fetching water from the water sources located outside the premises, making 10 to 11 trips a day with a round trip duration of mostly up to 15 minutes.

6.1.2. COMMUNITY PARTICIPATION AND INVOLVEMENT DURING PROJECT IMPLEMENTATION

Village Water Sanitation Committee (VWSC)/ Pani Samiti were constituted in almost all villages as part of the rural piped water supply scheme, ensuring inclusion of women and SC/ ST category as its members. Active participation of VWSC and community members was seen during Social and Resource Mapping in 15 out of 19 villages. Approval by Gram Panchayats of the Detailed Project Reports (DPR) prepared by AKF showed their satisfaction, further to which Village Action Plan (VAP) for implementation, operation and maintenance of the water supply scheme was made by the Gram Panchayat - with help from Aga Khan Foundation. At the household level, around one-fourth households in the treatment group reported the involvement of any member of their households in making the VAP and water safety planning (WSP) for improving water safety for all sources of water supply.

Through the training received and participation encouraged under the FDP, the intervention ensured that the programme is community led and managed. To this effect, trainings on various aspects were given to

village representatives such as developing by-laws of VWSC, calculation of water tariff and fixing of user charges, training of plumbers, masons and pump operators, monitoring water quality and water source performance etc. More than three-fifth villages reported that their village representatives participated in such trainings. However, among all this, it may also be noted that villages confirming training on calculation of water tariff and fixing of user charges was lowest among all other trainings confirmed about. This may also be related to the fact that, in the beginning, only 7 percent treatment households paid the initial amount to the Jal Prabandhan Samiti (JPS) towards tap connection fees. Currently, the proportion of HHs that pay monthly water users' fee for the tap water connection is 18%. Remaining 82% of the households have reported not paying the monthly user fee, with over four-fifth reporting that they had no information on monthly user fee or about its payment/ no one came to collect the fee or ask for it/ that it was a free service. This is when 14 out of 19 villages had confirmed that user charges and water tariff were decided by Gram Sabha and agreed by community members. It must be noted that there is a need to fulfil the gaps in the tariff collection of the water bills at the household level to ensure that the water structure is maintained.

6.1.3. TRAINED CADRE OF LOCAL WOMEN & ADOLESCENT GIRLS AS WATER WARRIOR

About 10 in 19 villages confirmed that at least 5 women/adolescent girls been given training in the monitoring of water quality through Field Test Kits. Across households however, low awareness (36%) about the presence of "water warriors for checking water quality" in the village but among these, higher reporting (69%) on the collection of water testing samples from treatment households indicates a gap in awareness of households regarding women/girls identified as water warriors. The water warriors also mentioned about having to face some challenges in conducting water quality tests, as there is a lack in the awareness of the community members on the role of the quality monitoring to be done by women. The above findings are encouraging with respect to the practices including training and sample collection for quality checking. However, at the same time, it points towards the continued emphasis on awareness generation regarding the presence of water warriors and their role that would go a long way to further improve the outcome of water quality monitoring.

6.1.4. ENHANCED AWARENESS ON IMPORTANCE OF WATER QUALITY, WATER CONSERVATION, HYGIENE PRACTICES ETC

A fairly high proportion of households in the treatment group reported to have received information or awareness on various aspects (63 to 80%) of the piped water supply scheme around importance of quality drinking water, conservation of water resources, hygiene practices and their role in managing the piped water scheme as a community.

Cleanliness and good hygiene practices in daily life was other important aspect on which training was received by a majority of the treatment house. There has been a positive change in maintaining hygiene practices among the community.

6.2. SUMMARY OF FINDINGS PERTAINING TO PROJECT IMPACT

6.2.1. ACCESS TO REGULAR, ADEQUATE AND QUALITY SAFE DRINKING WATER

Treatment households, by and large, were satisfied with the regularity, quality, and quantity of drinking water supply under the FDP. A significant increase of 22 percent in daily water consumption was reported in treatment households (295 litre, per capita 49 litre) as compared to water consumption before the installation of the tap (241 litre, per capita 41 litre) and control households (268 litre, per capita 45 litre). While the current water consumption in treatment households is slightly behind the JJM mandate of ensuring access of piped water supply of 55 litre per capita per day for every rural household, the increase in amount of water consumed as compared to prior the FDP tap installation is statistically significant, implying that the increase is not a matter of random chance, but attributable here to the intervention done and access to tap water provided under the FDP.

Moreover, over 97 percent of households in the treatment group reported that the water received from the household tap was clear, with no smell and no taste. In fact, the difference between treatment and control group for water colour and taste, was found to be statistically significant, attributable to the good quality water received by the FDP beneficiaries. Moreover, the overall quality and potability of water were rated as “good” by a higher proportion of households in the treatment group than in the control group, which in both cases was statistically significant.

The automatic chlorine dozer of the water system at the village level was found functional for 13 of 19 villages since its inception. For the remaining villages, the chlorine dozer had been non-functional, which could have implications for the long-term maintenance of water quality.

6.2.2. CAPACITATED COMMUNITY TO OPERATE AND MANAGE THE WATER SUPPLY SCHEME ON ITS OWN

The FDP sought to capacitate the community in ways that they would be able to operate and manage the water supply scheme on their own, having in place a system to ensure smooth operation of the scheme along with mechanism for compliant redressals if and when they arise. About 12 in 19 villages expressed confidence of being equipped to a very large/large extent to monitor and maintain the functioning of the water system in the future. Further, about half the villages, 9 in 19, reported that their village did have a complaint grievance mechanism to cater to complaints from households regarding the installed tap. The grievance redressal mechanism for repairs of the water structure requires improvement, however, as majority household members are unaware of the support for repairs. Among those who were aware, the Gram Pradhan primarily and Pani Samiti members to some extent are seen as the point of contact for repairs of household taps. While villages reported that they are yet to experience any major repair work in the system, some of the minor repair works are being handled by the community members themselves, individually or in small group. Among the 6 percent households that required any repairs of tap connection since its installation, the repair work had usually taken a maximum of 3 days for majority households. A pump operator was also allotted in the village for the maintenance of the water system.

However, with respect to Jan Choupal to discuss service-related issues of the water supply scheme, majority villages had organized it only once in the past one year, calling for further improvement by increasing the frequency of such meetings.

6.2.3. MEASURES TOWARDS SUSTAINABILITY OF WATER SOURCE ADOPTED BY HHs AND COMMUNITY

Most village representatives, during the village survey, were of the opinion that the FDP has enhanced the community’s awareness about environmental sustainability through efforts towards wastewater management or that training in water sustainability and conservation has led to increased water table in village. They all agree that rain water harvesting, water absorption tanks or pits are important measures for ground water recharge. However, uptake and adoption of these practices at the household level is lower. For instance, 29 percent of the treatment households reported having received the training on rainwater harvesting, of whom 23% established a rainwater harvesting system in their household. Further, only 2 percent of the HHs adopted any practices for the reuse of household waste water from kitchen, bathroom, clothes or utensils wash. This calls for the further need to organize communication activities on these techniques/activities.

6.2.4. IMPROVED HEALTH INDICATORS AND REDUCED BURDEN OF WATER-BORNE DISEASES

As per the village survey, there had been a decreased incidence of waterborne diseases in the community, after the installation of taps in people’s households. The household-level survey also reported a low

incidence of waterborne diseases (21-49%) in the past 6 months (including the monsoon period) in treatment and control households with no significant difference between the two types of study groups.

In the last year and after the implementation of the FDP, treatment households reported spending an average of Rs.6541/- for the treatment of water-borne diseases. This amount was 9 percent lower than the earlier amount of Rs.7165/- which they used to spend before getting access to potable water through the FDP. The difference in expenditure for the treatment households before and after the FDP was statistically significant indicating an impact of the FDP. For the control households, the average expenditure on treatment of water-borne diseases was Rs.5983/-. The difference between control and treatment households in this regard did not produce statistically significant results.

About 79% of the households in the treatment group reported that the incidence of such water-borne diseases has reduced in their family due to the use of clean tap water installed under this piped water scheme. Of these, 97% of households perceived that the cost of treatment for such water-borne diseases therefore also reduced. This may be seen as a major impact of the installation of household taps.

6.2.5. ADOPTION OF IMPROVED HYGIENE PRACTICES

Presuming tap water availability facilitates hygiene practices, the survey inquired about the adoption of improved hygiene practices at the household level which is a key measure to assess the incidence of waterborne diseases as well.

The hand-washing behavior of treatment and control households was more or less favorable as all the members of these households reported washing their hands with soap during most of the critical times except one i.e. after cleaning babies' bottoms/disposal of children's faeces. The majority of the households having toilets in both study groups were using toilets. Throwing the child's stool into the garbage or putting/rinsing into the toilet was the usual practice of disposal of the stool passed by the child both in the treatment and control households.

Maintaining cleanliness of the water tanks has been helpful in curtailing the growth of algae at the bottom of the tanks leading to contamination. The practice of spraying disinfectants has also ensured hygiene.

6.2.6. EMPOWERMENT OF WOMEN AND ADOLESCENT GIRLS

Women empowerment was assessed in the context of a perceived reduction in the drudgery of women and girls in fetching water, their perceived enhancement in capacity and leadership through their involvement in water testing, and the increase in their participation in village activities and sharing their opinions through their involvement in the piped water scheme.

The installation of taps reduced the burden to a very large/large extent for HH members especially women, in time and effort otherwise spent in fetching water (81%). Women/adolescent girls' involvement in water testing has enhanced completely / to a considerable extent their capacity and leadership (43%). The involvement of women in this community-managed piped water supply scheme has helped them completely/ to a considerable extent to participate more in village activities and share their opinions (45%). Almost similar findings were reported through the village survey where it was perceived that the involvement of women as Water Warriors has led to the capacity building and empowerment of women to a very large extent (47%) and some/small extent (53%).

6.3. RECOMMENDATIONS

Based on the study findings, a few key recommendations emanate:

1. Continued emphasis on awareness generation of water quality testing is needed since that would go a long way to further improve the outcome of water quality monitoring.

2. It is evident from the findings that the training has been imparted to the villagers on water conservation and source sustainability. However, there is need to strengthen implementation of these learnings into practice at the household and community level such as rainwater harvesting and reuse of water.
3. Ensuring strengthened mechanisms for monthly tariff collections would be helpful to maintain sustained functioning of the water structure and its smooth operation and maintenance.
4. Awareness generation of the grievance redressal mechanism for repairs of the water structure may go a long way to sustain the water infrastructure in future.
5. Regular meetings of Jan Choupal would not only increase community participation but also help the awareness generation and hence redressal about the various day-to-day issues of water supply

Annexure 1

Annexure 1: List of FGDs and KIIs conducted

Focus Group Discussions
1. Beneficiaries, Devhara village
2. Beneficiaries, Mirzapur Maafi village
3. Beneficiaries, Sarai village
Key Informant Interviews
VWSC member, Bersapur village – Ram Swaroop
VWSC member, Mukeempur village - Rampal
VWSC member, Mirzapur Maafi village - Shanti
VWSC member, Devhara village – Shiv Kumar
VWSC member, Bhagwatipur Maafi village – Shiv Sagar
VWSC member, Ganera village – Sonu Yadav
WQMS member, Bibipur village – Laali & Jaishree
WQMS member, Banyani village – Meena devi
WQMS member, Ganera village – Meena
WQMS member, Mukeempur village - Shalini
Sarpanch, Bersapur village – Satish Kumar
VDC member, Bhagwatipur village – Guddu Yadav