



Functionality Assessment of Household Tap Connection under National Jal Jeevan Mission - 2022



Har Ghar Jal
Jal Jeevan Mission

STATE REPORT: JHARKHAND
SURVEY DURATION: MARCH TO APRIL 2022

Contents

Abbreviations	2
Glossary	3
Executive Summary	5
1. State Factsheet	8
2. Context	10
2.1. State snapshot: Jharkhand	10
2.2. FHTC Assessment Objectives	11
2.3. Assessment Methodology	11
2.4. Sample Size	11
2.5. Sampling Methodology	12
2.6. Methodology for Water Quantity Measurement at Households	13
2.7. Methodology for Water Quality Measurement	13
2.8. Project Implementation	15
2.9. Sample coverage	16
2.10. Sampled village and household profile	16
3. Findings	17
3.1. Functionality status of FHTC at household level	17
3.2. Quantity, Regularity, and Quality of Water	20
3.3. Operation and Maintenance (O&M) of schemes at village level	29
3.4. Utilization of water at HHs for drinking and other activities	31
3.5. Source sustainability at the village level	35
3.6. Water quality monitoring and surveillance in the villages	36
3.7. Management of water service delivery at village level	40
3.8. Status of Operation & Maintenance	42
3.9. Status of service delivery related grievances and redressal	44
3.10. Perception of HHs on Outcome Indicators	47
3.11. User satisfaction	49
4. Functionality status of FHTC at household level for Har Ghar Jal districts	50
4.1 Overall Functionality (in %)	50
4.2 Perception of HHs from Har-Ghar-Jal villages on Outcome Indicators	51
4.3 Direct benefits in terms of income due to FHTC	52
4.4 Change in social status	52
5. Functionality status of FHTC at household level for aspirational districts	53
5.1 Overall Functionality (in %)	53
5.2 Perception of HHs from aspirational districts on Outcome Indicators	54
5.3 Direct benefits in terms of income due to FHTC	55
5.4 Change in social status	56
6. Annexure	57

Abbreviations

AWC	Aanganwadi Centre
FHTC	Functional Household Tap Connection
Gol	Government of India
GP	Gram Panchayat
HF	Health Facility
HH	Household
HGJ	Har Ghar Jal
JJM	Jal Jeevan Mission
LPCD	Litres per Capita per Day
MVS	Multi-village Scheme
NJJM	National Jal Jeevan Mission
RC	Residual Chlorine
O&M	Operation and Maintenance
OHT	Over Head Tank
PSU	Primary Sampling Unit
PWS	Piped Water Supply
SVS	Single Village Scheme
VAP	Village Action Plan
VWSC	Village Water and Sanitation Committee
WQMIS	Water Quality Monitoring and Information System

Glossary

1. **Community** – Group of people living in one particular area or village/habitation
2. **Cross-sectional research** – A cross-sectional study is a type of research design in which data is collected from a relatively large and diverse group of people at a single point in time
3. **Drinking water source** – Groundwater (open well, borewell, tube well, handpump, spring, etc.)/ surface water (river, lake, pond, reservoir, etc.)/rainwater, available for drinking and domestic use
4. **Improved sources** – The following sources as considered improved by the National Family Health Survey definitions: Piped water into dwelling, yard/plot with a tap, piped water connected to public stand-posts, tube well or borewell, Hand pump, dug well–protected, Spring–protected, Rainwater, Water ATM/ Community RO plant/ Community Water Purification Plant (CWPP)
5. **Unimproved sources** – The following sources as considered unimproved by the National Family Health Survey definitions: Unprotected spring, unprotected dug well, cart with small tank / drum, Tanker/ truck, Surface water (river/ dam/ lake/ pond/ canal), and bottled water
6. **Functional Household Tap Connection (FHTC)** – A tap connection to a rural household for providing drinking water in adequate quantity of prescribed quality on regular basis.
7. **Functionality of FHTC** – Functionality of a tap connection is defined as having infrastructure, i.e., household tap connection providing water in adequate quantity, as presented:

Definitions	Fully-functional	Partially-functional	Non-functional
Quantity	>= 55 LPCD	> 40 lpcd - < 55 LPCD	< 40 LPCD
Regularity	12 months or daily basis	9-12 months or < daily basis	< 9 months or < daily basis
Quality	Potable	Potable	Non potable

8. **Quantity (in litres)** of water received by households per person per day should meet the service level of 55 lpcd.
9. **Functionality Assessment** – An assessment of the functionality of rural household tap connections based on a sample survey
10. **Fully Regular** – Regularity of water is considered when a rural household receives water for 12 months on daily basis or as per schedule.
11. **Potability** – Potable water is water that is safe to be used as drinking water. Parameters of potable water are mentioned below:

Parameters for potable water tested in the survey	Unit	Acceptable Limit	Permissible Limit in the absence of alternative sources
i. pH (tested on site)	-	6.5 to 8.5	No relaxation
ii. Free residual chlorine (tested on site)	Mg/litre	0.2	1
iii. Turbidity	NTU	1	5
iv. Total hardness	Mg/litre	200	600
v. Total alkalinity	Mg/litre	200	600
vi. Chloride	Mg/litre	250	1000
vii. Ammonia	Mg/litre	0.5	No relaxation
viii. Phosphate	Mg/litre	0.3	1
ix. Iron (in hotspots only)	Mg/litre	1	No relaxation
x. Nitrate	Mg/litre	45	No relaxation
xi. Sulphate	Mg/litre	200	400

xii.	Total dissolved solids	Mg/litre	500	2000
xiii.	Fluoride	Mg/litre	1	1.5
xiv.	Arsenic (in hotspots only)	Mg/litre	0.01	No relaxation
xv.	Bacteriological test for Total coliform bacteria and E. coli or thermotolerant coliform bacteria		Shall not be detectable in any 100 ml sample	

12. **Sampling** – Selection of a subset of individuals from within a statistical population to estimate water service delivery among the population. In the current study, households have been sampled to estimate the representation of the village and subsequently of the district as well as of the state.
13. **Types of schemes:** Following are the piped water supply schemes that were assessed
- Mini-solar based piped water supply scheme in isolated/tribal hamlets
 - Single Village Scheme (SVS) in villages having adequate groundwater that needs treatment
 - Single village scheme (having adequate groundwater/ spring water/ local or surface water source of prescribed Quality)
 - Retrofitting of ongoing schemes taken up under erstwhile NRDWP for the last mile connectivity/ retrofitting of completed rural water supply schemes to make it JJM compliant
 - Multi-village PWS scheme - with water grids/ regional water supply schemes
14. **Village Action Plan (VAP)** – Plan prepared by Gram Panchayat and/ or its sub-committee, i.e., VWSC/ Paani Samiti/ User Group, etc. based on baseline survey, resource mapping and felt needs of the village community to provide FHTC to every rural household, treat the generated greywater and plan its reuse, undertake surveillance activities, etc. VAP also indicates the fund requirement and timelines for completion of work under the Mission and will be approved by the Gram Sabha. Irrespective of the source of funding, all drinking water-related works in the village are taken up based on the VAP.
15. **Source Sustainability** – includes measures such as aquifer recharge, rainwater harvesting, increased storage capacity of water bodies, reservoirs, de-silting, etc. improve the lifespan of water supply systems
16. **Har Ghar Jal (HGJ)** – An administrative unit wherein all HHs are provided with water supply through FHTCs is called “Har Ghar Jal”.
17. **Public Institutions** – The public institutions in the survey include Aanganwadi Centre (AWC), Health Facilities, Schools, Gram Panchayat, and government buildings.
18. **Working tap connection** – A tap connection supplied water at least one day in the week, preceding of survey
19. **Functional Scheme** – A scheme is said to be functional if it was reported to be working for all 12 months in a year.

Note: The detailed analysis of data at the district level has been incorporated in the District Reports presented separately. The State Reports are to be read in concurrence to the District Reports.

Executive Summary

Jal Jeevan Mission (JJM) was launched on the 15th of August 2019 with the objective to provide functional household tap connections (FHTCs) to all rural households. NJJM, GoI engaged HTA Kantar Public to conduct the 'Functionality Assessment' of the tap connection at households as well as public institutions/ buildings such as schools, anganwadis, gram panchayat buildings, public health facilities, and wellness centers in all the rural districts for the financial year 2021-22.

A cross-section research design was adopted for this functionality assessment study. As per the design, all villages having a piped water scheme (PWS) with 20 or more functional household tap connections were included in the sample frame. There after the required number of villages were randomly selected villages such that these are statistically significant at the district level.

In this study, data was collected from the households, and public institutions (i.e., schools, anganwadis, gram panchayat buildings, public health facilities and wellness centers, etc.) in the randomly selected villages. Water quantity and quality were also tested in the sampled households and public institutes. Quality testing was conducted for various parameters, out of which pH and residual chlorine were tested on the ground and for the remaining 12 different quality parameters water sample was collected and sent to the nearest NABL accredited district labs for testing.

The state of Jharkhand lies in the eastern part of India and has a population of 3,29,88,134 (Census 2011). It has 24 districts and 29756 villages, and 12075 villages have PWS schemes. The state is yet to achieve the Har Ghar Jal status. A total of 370 villages, across all districts, and 9293 households were randomly sampled for the survey, and additionally, water samples from 46 public institutions were tested.

In the assessment among sampled villages, 64% of villages have only one scheme, 22% of villages have 2-3 schemes, and 14% of villages have 4 and more schemes. Mostly all schemes across the state were found functional.

At the state level, 63% of the HHs were satisfied with the regularity of the supply, 65% with the quality of the water supplied, 67% with the colour of the water supplied, and 67% with the taste of the supplied tap water.

Overall functionality status of Jharkhand

At the state level, 49% of HHs received water on the day of the survey. While 55% of the HHs were found to have fully functional tap water connections within the premises. Out of which 83% received an adequate quantity of water, 70% reported receiving a fully regular supply of water, and 86% HHs received potable water.

It was found that more than 84% of households received water all 7 days a week and 5% received at least 3 to 4 days, while 8% of the HHs received water once a week. The average duration of water supply across the state was reported to be 3 hours per day.

In Jharkhand, 44% of the villages have reported that water is directly supplied to the households and the remaining 56% reported that water was supplied via an overhead tank, sump, or both.

During the roll-out of the data collection in the state, all-district level NABL accredited laboratories (labs) extended their support in accepting and testing water samples from HHs and public institutions. One of the challenges identified by the labs was the capacity to test

more than 30-40 samples within 24 hours given the shortage of technicians and availability of necessary reagents in the required quantity. In Jharkhand, 4621 samples of water were submitted, and 4327 were tested at the labs. The turnaround time of testing of water sample was more than 48 hours in most cases. Given this feedback, it can be conferred that these labs have limited scope to take up samples from the general public at large on a regular basis. The different quality parameters of the collected water samples that were tested were turbidity, total hardness, total alkalinity, chloride, iron, nitrate, sulphate, total dissolved solids, bacteriological test, arsenic, and fluoride.

Residual chlorine was found within the permissible limit only in 4% of the HHs. The percentage was relatively higher in HFs, and Schools (more than 10%), wherein there is a possibility of additional chlorine being added locally for the purification of water. All the collected water samples passed the bacteriological contamination test.

Out of the 9293 HHs sampled for the FHTC assessment, a water quality test was carried out in 4575 due to the non-availability of water in 51% HHs on the day of the survey. pH was found within the acceptable limit in 88% of households. Among the public institution, pH was found in the acceptable limit of more than 95% in AWC, and schools.

17% of villages in the state reported having available field test kits. And 17% of these reported to have either VWSC/Pani Samiti or pump operators trained to use field test kits for testing the quality of water on-site.

Water quality management in village

It was found that 38% of villages in the state reported having a VWSC or a Pani Samiti out of which 64% of the VWSC/Pani Samitis reported to have more than 50% female members. In the state, 10% of villages reported that VWSC/ Pani Samiti is responsible for the operation and maintenance of pipe water supply.

20% of villages reported having identified skilled manpower for O&M of PWS schemes. 12% of villages in the state reported having faced challenges with respect to O&M of PWS schemes.

34% of HHs reported that they are aware of any grievance redressal mechanism w.r.t. HH tap water through PWS, but only 3% HHs have reported a complaint in the last year and only 1% of complaints have been resolved. Among those who reported complaints (i.e., 3% HHs, 293 HHs), 45% of the HHs reported their complaints to the pump operators besides other reporting channels.

Overall, 14% of villages in the state levy charge for water service delivery to households whereas 13% HHs reported paying water service delivery charges at the households.

53% of HHs reported that their daily requirement of water was being met by HH tap connections.

Overall, 37% of HHs reported using an improved source of drinking water, as their primary source. The state also needs to further strengthen communication for the quality of water supplied so that every household can use the same for drinking purposes.

Overall, 3% HHs reported using booster pumps to maximize the water flow through their piped water connections.

It was found that 22% of the villages have schemes that are based on groundwater sources, while 10% on surface water sources.

Age-wise functionality of the schemes indicates improvement in 'always functional' schemes and a decrease in the 'non-functional scheme' in the state since 2012. 16-% point increase in the fully functional scheme was recorded from 2012 to 2013-18. In 2019 and later 10%

increase in fully functional schemes occurred, however, 58% of schemes have been reported to be always functional and 11% as partially functional (i.e., a total of 69% of schemes).

Impact of JJM

Across the state, only 1% HHs reported having an incidence(s) of water-borne diseases in the last year.

Since having a functional HH tap connection, 22% HHs across the state have reported that there has been a change in the no. of employment days of the adult HH members while 66% HHs reported no change.

Out of the HHs reported (i.e., 7062) that female members used to fetch water before HH tap connection, 57% reported that post-installation of HH tap connection helped reduce of time and effort in collection of water.

Across the state, 30% HHs reported that since having a functional HH tap connection the attendance of the girls going to schools has increased, while 63% HHs reported no change in attendance which could possibly be an impact of shutting down of schools due to COVID-19 related lockdown during the survey period.

Functionality Status of Har Ghar Jal Districts

At the state level for Har Ghar Jal districts, 39% of households received water on the day of the survey. While 36% of the households were found to have fully functional tap connections. Out of which 66% received an adequate quantity of water, less than half reported receiving a fully regular supply of water and 96% received potable water.

Since having a functional HH tap connection, one-fifth reported that there has been a change in no. of employment days. Out of the HHs in which female members used to fetch water before HH tap connection, 60% reported that post-installation of HH tap connection helped reduce time and effort in collecting water. Across the Har Ghar Jal district, 7% HHs reported that since having a functional HH tap connection their income has directly benefitted.

Functionality Status of Aspirational Districts

At the state level for aspirational districts, 49% of households received water on the day of the survey. While 54% of the households were found to have fully functional tap connections. Out of which 83% received an adequate quantity of water, more than two-third reported receiving a fully regular supply of water and 84% received potable water.

Since having a functional HH tap connection, 22% reported that there has been a change in no. of employment days. Out of the HHs in which female members used to fetch water before HH tap connection, 56% reported that post-installation of HH tap connection helped reduce time and effort in collecting water. Across the aspirational district, 12% HHs reported that since having a functional HH tap connection their income has directly benefitted.

1. State Factsheet

Functionality status of tap connection at households	India	Jharkhand
Working tap connections- HHs which received water through tap connection at least once in last 7 days (%)	86	49
Quantity ¹ of water received by households		
Adequate quantity (>55 LPCD) (%)	85	83
Partially adequate quantity (> 40 LPCD - < 55 LPCD) (%)	5	6
Inadequate quantity (<40 LPCD) (%)	10	11
Regularity ² of water received by households		
Fully Regular Supply (as per schedule) (%)	80	70
Partially Regular Supply (not as per schedule) (%)	14	18
Irregular Supply (less than 9 months' supply) (%)	6	12
Potable ³ (Quality) water received by households (%)	87	86
Overall functionality ⁴ (%)	62	55

Service delivery parameters	India	Jharkhand
Overall user satisfaction on regularity at the household level (%)	83	63
Overall user satisfaction on quality at the household level (%)	82	65
Households receiving water supply daily-7 days a week (%)	74	84
Daily HH requirement of water being met by FHTC (%)	80	53
Households paying water service delivery charges (%)	35	13
Households aware of grievance redressal mechanism (%)	71	34
Households reported a reduction in time and effort in collecting water (%)	79	57
Average no. of times water is supplied in a day	1	1
Households reported incidence of water-borne diseases in the last year (%)	2	1
Households purifying water before drinking (%)	57	37
Residual Chlorine (RCL) detected with in permissible limits (%)	24	4
Villages with Field Test Kits (%)	30	17
Villages in which bacteriological test was done in last 1 year by VWSC/ Pani Samiti (%)	29	14
Villages reported to have a mechanism for chlorination (%)	21	7

Service delivery parameters	India	Jharkhand
Village reported having presence of VWSC/ Pani Samiti (%)	38	38
Villages in which VWSC/ Pani Samiti is responsible for Operation & Maintenance of PWS schemes (%)	14	10
Villages in which persons are trained to use Field Test Kits (%)	31	17
Villages levying water service delivery to households (%)	34	14
Villages having skilled manpower for Operation & Maintenance of PWS schemes (%)	31	20
Community monitoring of water wastage in villages (%)	19	6
Villages in which signages about JJM were observed (%)	15	16

¹ Quantity (in litres) of water received by households per person per day should meet the service level of 55 lpcd

² Regularity is receiving water for 12 months or daily basis as per schedule

³ Potable water has been considered basis testing of water samples through laboratory tests for physical, chemical, and bacteriological parameters (within acceptable/ permissible range) and onsite testing of pH.

⁴ Overall functionality has been computed as the intersection of Adequate Quantity, Fully Regular Supply and Potable (Quality) for households wherein water supply was available at the time of survey

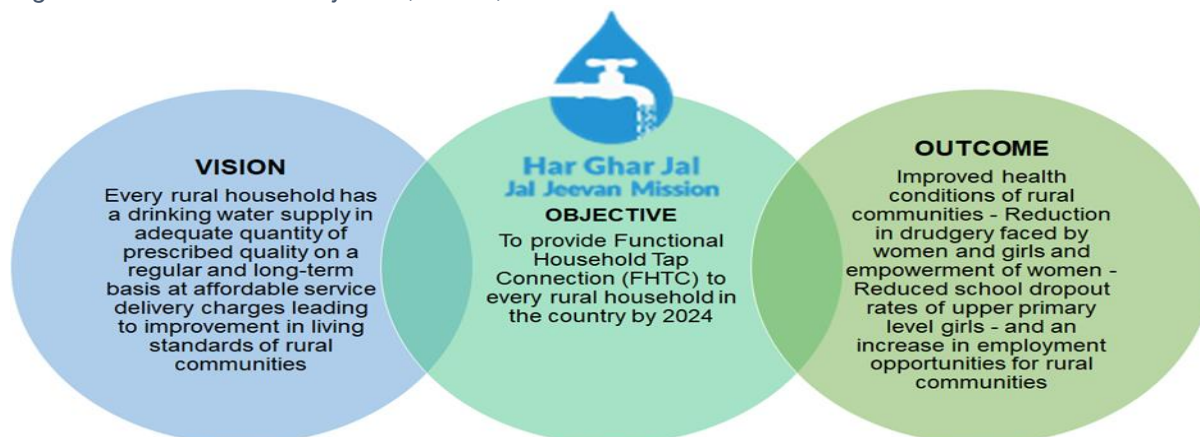
Functionality status of tap connection at households in Har Ghar Jal Districts	India	Jharkhand
Working tap connections- HHs which received water through tap connection at least once in last 7 days (%)	91	39
Quantity of water received by households		
Adequate quantity (>55 LPCD) (%)	88	66
Partially adequate quantity (> 40 LPCD - < 55 LPCD) (%)	4	12
Inadequate quantity (<40 LPCD) (%)	8	22
Regularity of water received by households		
Fully Regular Supply (as per schedule) (%)	84	48
Partially Regular Supply (not as per schedule) (%)	11	28
Irregular Supply (less than 9 months' supply) (%)	5	24
Potable (Quality) water received by households (%)	90	96
Overall functionality (%)	69	36

Functionality status of tap connection at households in Aspirational Districts	India	Jharkhand
Working tap connections- HHs which received water through tap connection at least once in last 7 days (%)	78	49
Quantity of water received by households		
Adequate quantity (>55 LPCD) (%)	85	83
Partially adequate quantity (> 40 LPCD - < 55 LPCD) (%)	5	6
Inadequate quantity (<40 LPCD) (%)	10	11
Regularity of water received by households		
Fully Regular Supply (as per schedule) (%)	77	71
Partially Regular Supply (not as per schedule) (%)	14	18
Irregular Supply (less than 9 months' supply) (%)	9	11
Potable (Quality) water received by households (%)	88	84
Overall functionality (%)	62	54

2. Context

Jal Jeevan Mission (JJM) was launched on the 15th of August 2019 with the objective to provide functional household tap connections (FHTCs) to all rural households.

Figure 1: Har Ghar Jal - Objective, Vision, & Outcome



In accordance with the overall objectives as specified in the Operational Guidelines for the implementation of the NJJM, GoI carried out a sample survey to assess the functionality of household tap connections. As part of this endeavour, NJJM, GoI engaged HTA Kantar Public to conduct the 'Functionality Assessment' of the household as well as public institution/buildings such as schools, anganwadis, gram panchayat buildings, public health facilities, and wellness centers in all the rural districts for the fiscal year 2021-22.

2.1. State snapshot: Jharkhand

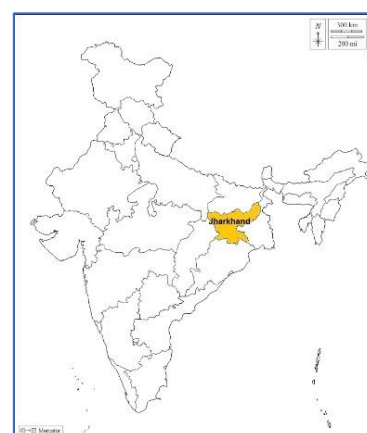
The state of Jharkhand lies on the eastern part of India and has a population of 3,29,88,134 people. It has 24 districts and 29756 villages where 12075 villages have PWS schemes. The state lies on the Eastern Plateau and Hills region and receives an average annual rainfall of about 1211.4mm. Among the villages with PWS schemes, 6695 villages (22.50%) have more than 20 households with functional tap connections. The state is yet to achieve the Har Ghar Jal status.

Presented here are state level information collated from the DDWS-IMIS:

Figure 2: State IMIS Status & Map

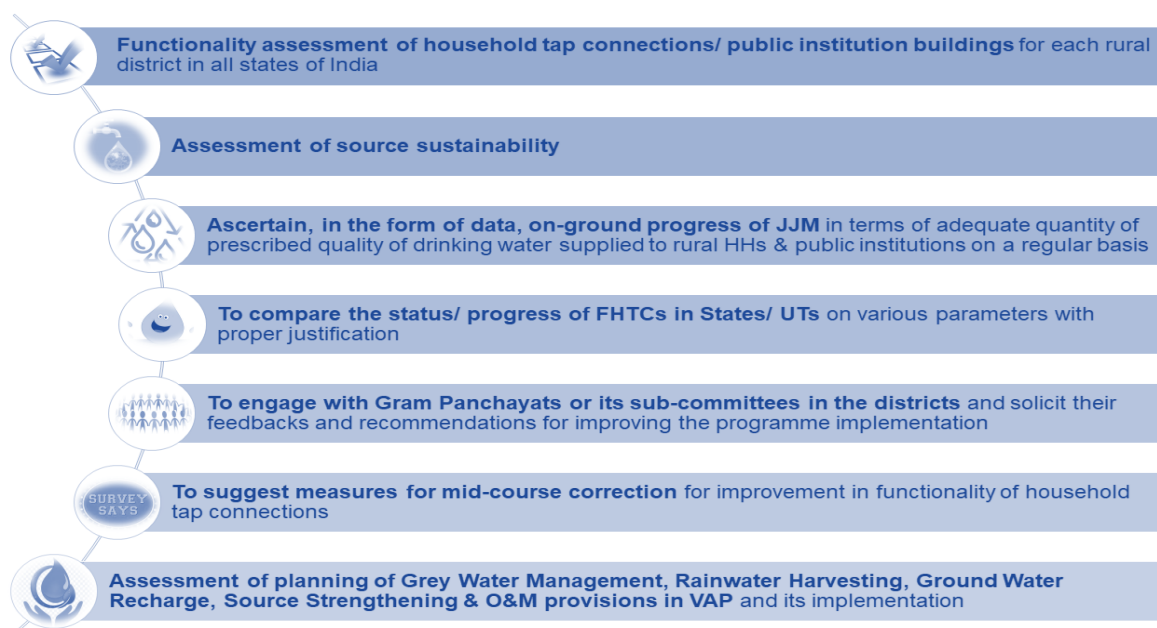
IMIS status:

- Not a Har Ghar Jal state.
- 13 districts are Iron & 9 districts are Fluoride affected
- 6695 (22.50% of all) villages with PWS more than 20 FHTC
- 1.59% villages covered under HH tap connections under HGJ



2.2. FHTC Assessment Objectives

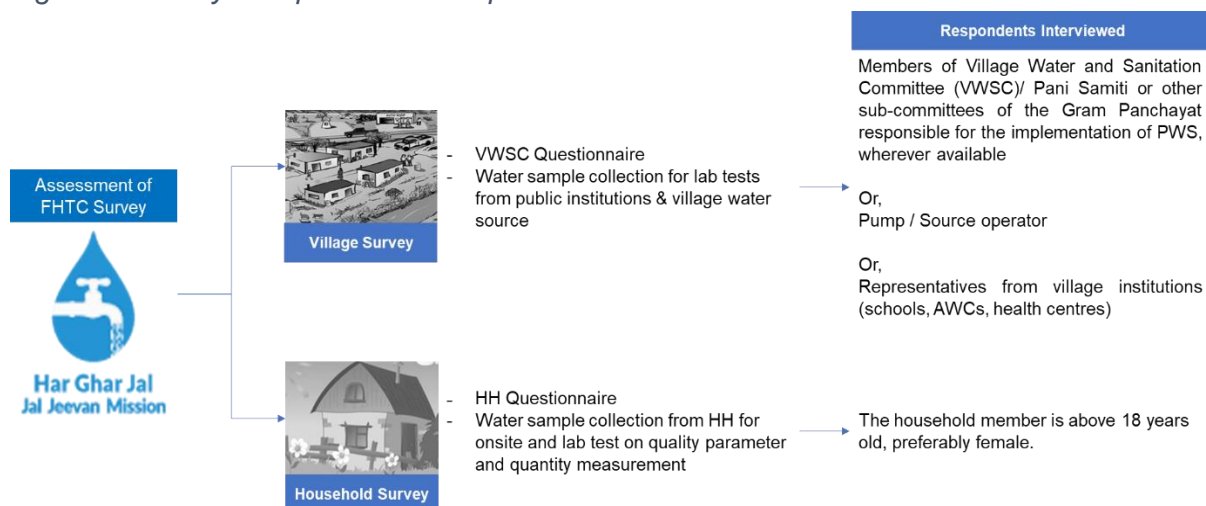
The overall objectives of the FHTC assessment are as presented:



2.3. Assessment Methodology

A cross-section research design has been used for this functionality assessment study. Quantitative data were collected from villages and households across all states/UTs using the CAPI (Computer Assisted Personal Interviewing) mode. The survey includes two components, village, and household.

Figure 3: Survey Components & Respondents



2.4. Sample Size

The sample size was calculated to provide estimates with a 95% confidence interval (CI) and 5% margin of error (MoE) after incorporating the correction factor for a finite population considering the total number of geographic units having FHTCs.

- Village sample is estimated to be representative at the state level
- HH sample estimated to be representative at the district level

- Number of Har Ghar Jal (HGJ) villages were proportionately sampled at the district level
- All PWS schemes (up to 4) were covered per village. Per scheme approximately 9 (3 each from the head, middle, and tail HHs) or 18 households (6 each from head, middle, and tail HHs) were sampled to achieve the desired sample at the district level.

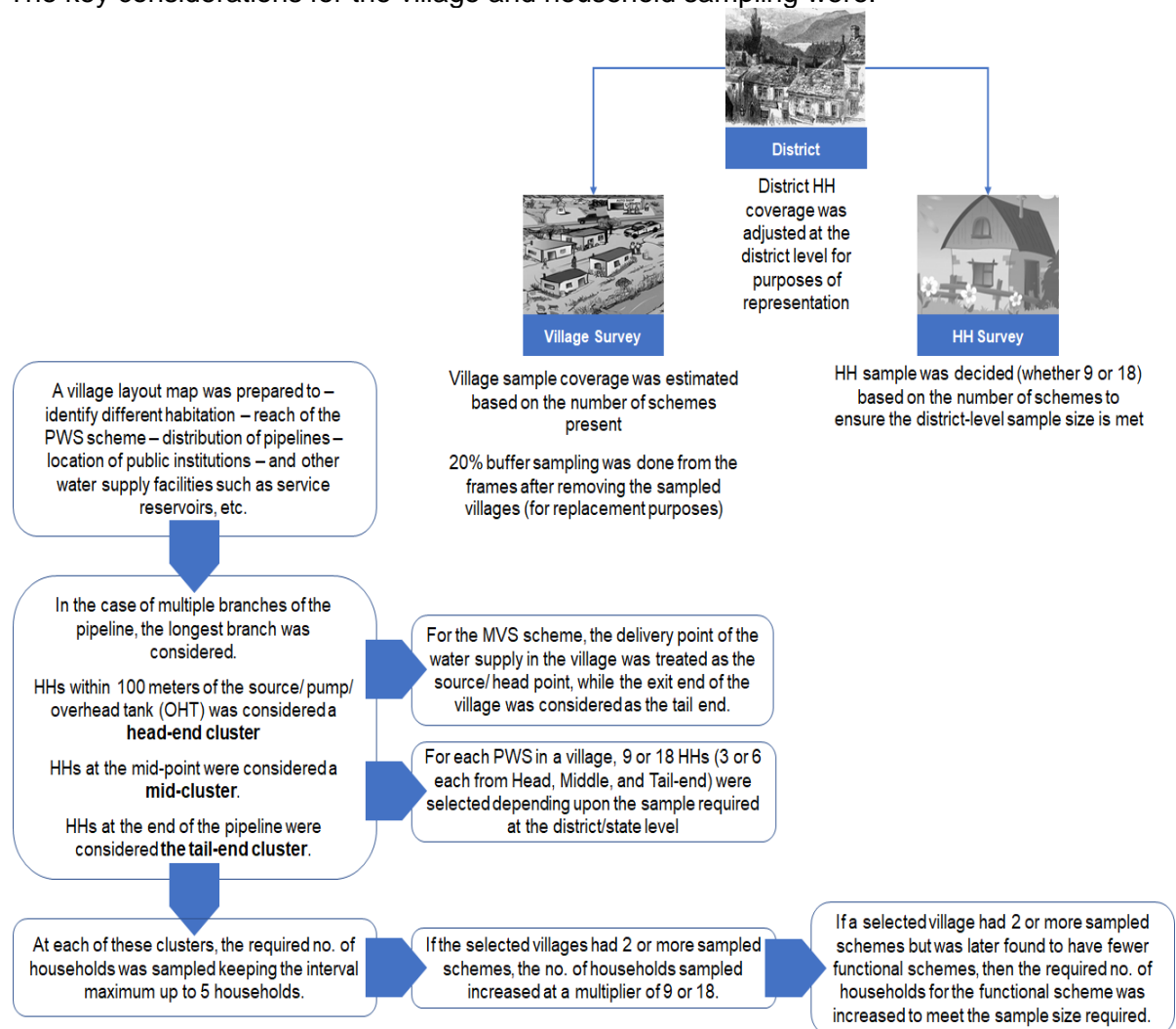
2.5. Sampling Methodology

As per the design, all villages having a PWS scheme with 20 or more functional household tap connections were included in the sample frame. The probability proportionate to size (PPS) method was used for village selection in each district. The steps for random selection of villages using PPS are presented below:

Figure 4: Steps for Random Sampling of Villages



The key considerations for the village and household sampling were:

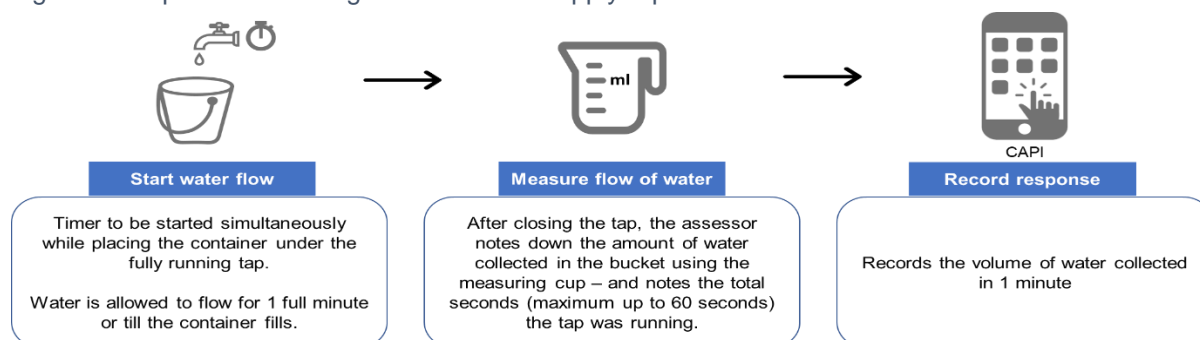


The record of all district-wise village replacements is maintained and reported as part of the annexure.

2.6. Methodology for Water Quantity Measurement at Households

The flow rate of the water supply was measured using a container with gradual markings (either 5 litres or 1 litre, based on the flow of the tap) and a stopwatch/timer-watch. The process followed is as described in Figure 6.

Figure 5: Steps for Measuring Flowrate from Supply-tap at HHs



In the case of households where the FHTC is connected directly with the storage tank, the following steps were adopted to measure the quantity:

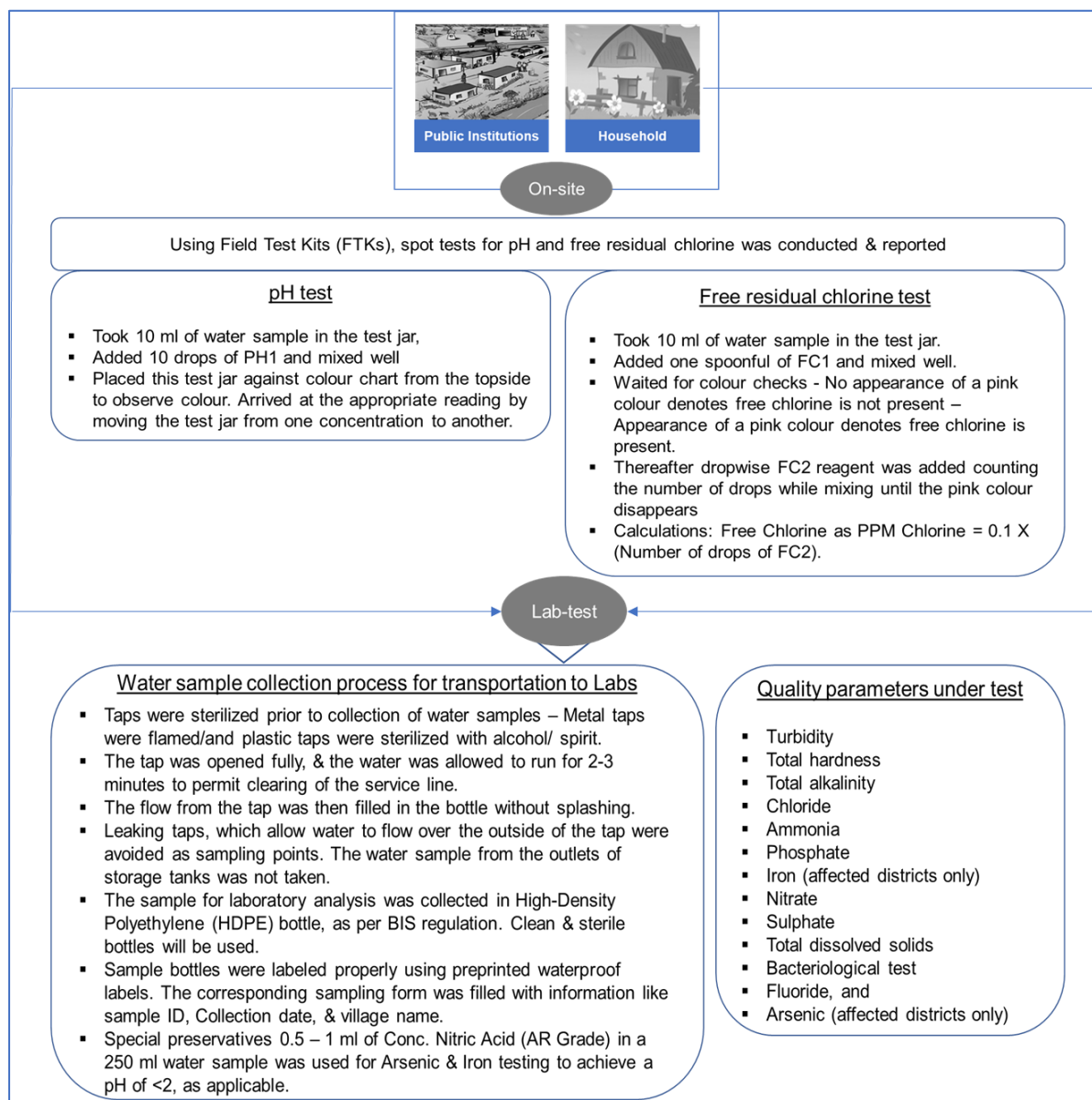
- Assessor first asked and recorded length, breadth, and height.
- Assessor dipped a 5 feet long rod, marked the level of the water table, and calculated the volume – length x breadth x-height of water.
- Next the assessor opened the valve of the connection and allowed the water to flow inside the storage for 10 minutes.
- After 10 mins, the valve was closed, and the assessor again dipped the rod and recorded the new height of the water inside the tank. Based on this new 'height' and the CAPI calculated the changed volume.
- The difference in the volume of water in 10 minutes divided by 10 provided the flow rate of the water supply per minute.

The water flow rate was not measured for village-level public institutions.

2.7. Methodology for Water Quality Measurement

Water quality was tested for all public institutions available in the villages, including schools, AWCs, gram panchayat buildings, public health facilities, and wellness centers, and at the selected households. Two types of quality tests were carried out – a) spot test for pH and free residual chlorine, and b) water sample was collected and transported to labs for testing against 13 quality parameters (total 15) as specified in Figure 7.

Figure 6: On-site & Laboratory-Based Quality Test

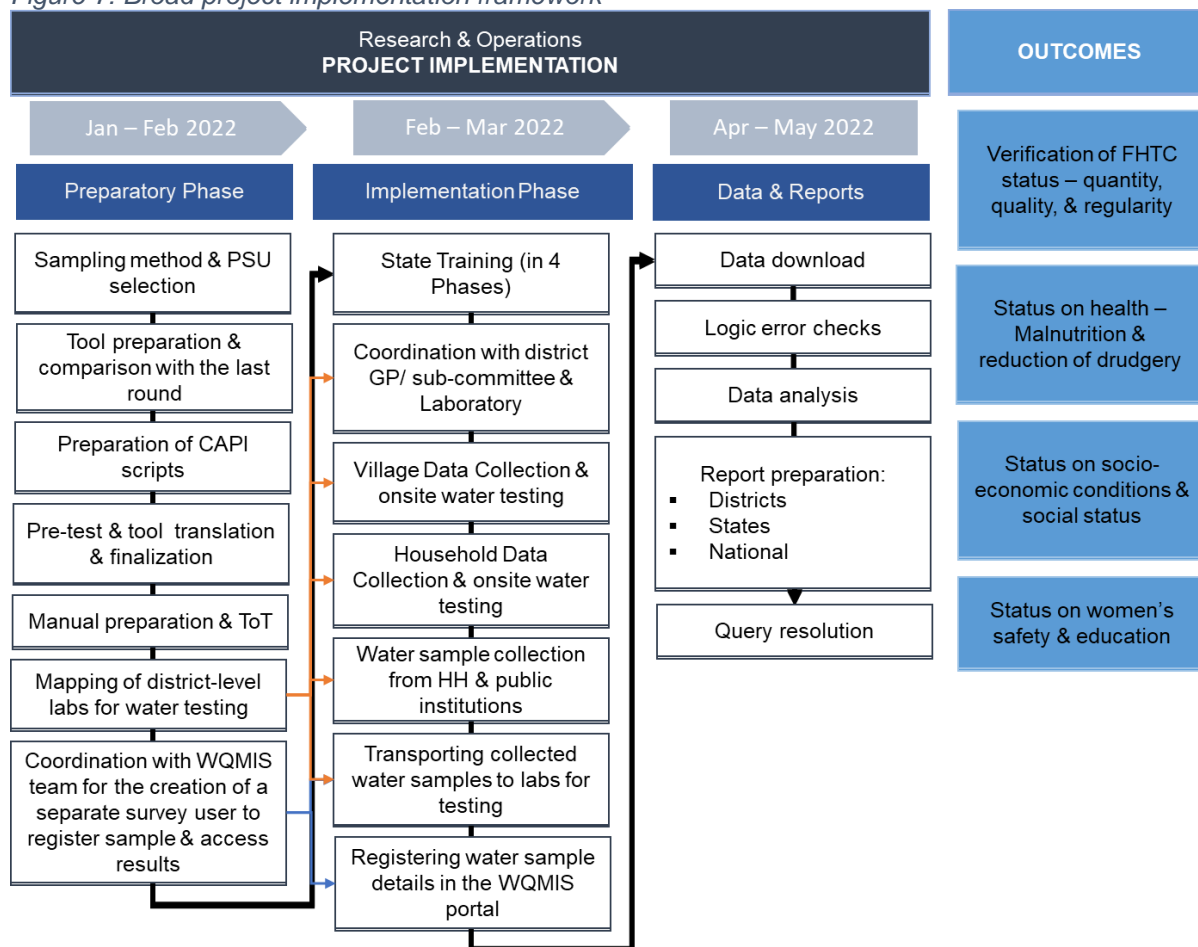


JJM, with the support of the BMI Division of ICMR, enabled a new interface on the WQMIS portal for “Functionality Assessment (FA) User” to enable seamless harmonization of water sample registration, and sample submission for testing, and sharing of results as per the applicable quality parameters.

2.8. Project Implementation

An overview of the project implementation is as presented:

Figure 7: Broad project implementation framework



A total of 15 teams (comprising 15 supervisors, 90 assessors, and 15 water collection assistants) were recruited, trained, and deployed to complete the survey across the states of Jharkhand. One survey team covered approximately 2 – 3 districts. The state-wise team deployment and fieldwork dates were as presented:

States	Teams deployed	Start date	End date	Total data collection days
Jharkhand	15 Teams	1 st March	12 th April	40 Days

A four-tier quality control (QC) system was put in place. At the ground level, the data collection exercise was done using a computer-aided Personal Interview (CAPI) application which contained all logic and skip-checks inbuilt. Also, 5% of the total samples were accompanied by the supervisors. Sub-targeted QC was done by the state field managers (5%) and the central project management team (5%). Apart from this, the central research team monitored the data trend and as per requirement debriefed data collection teams to improve quality.

2.9. Sample coverage

Table No. 2: Sample covered							
State	Targeted sample			Achieved sample			
	District	Village	HH	District	Village	HHs	PIs
India	712	13,300	3,00,000	712	13,299	3,01,389	16,148
Jharkhand	24	369	9,594	24	370	9,293	46

2.10. Sampled village and household profile

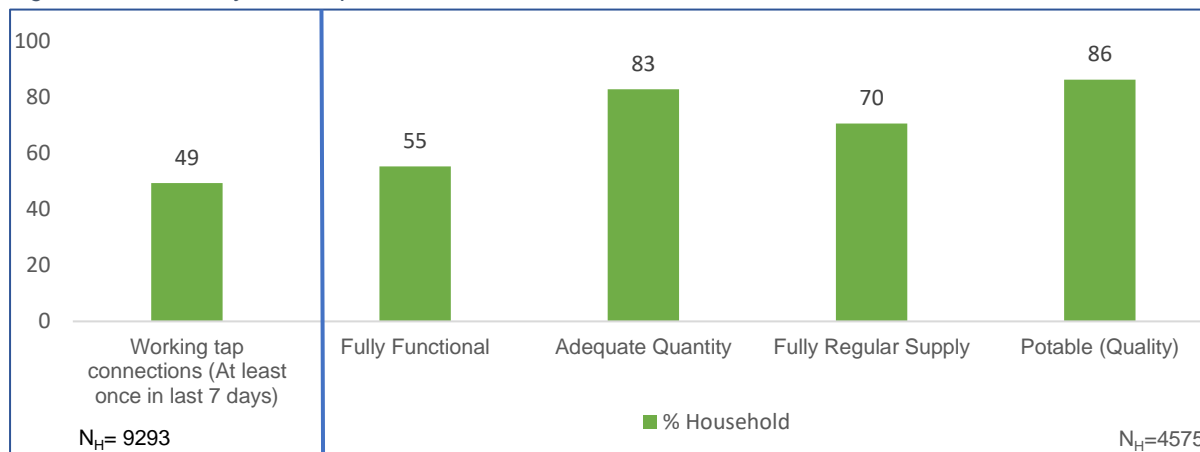
SAMPLED VILLAGES	SAMPLED HOUSEHOLDS
<ul style="list-style-type: none"> Total no. of villages covered in the state – 370 Percentage of SC dominated villages covered in the State is 8.1% (while at national level the average is 12.6%) Percentage of ST dominated villages covered in the State is 45.3% (while at national level the average is 20.2%) 1.9% of the villages reported to have any historical incidence of water contamination 	<ul style="list-style-type: none"> Total no. of households covered in the state – 9293 (Respondents: Male 4512, Female 4767 & Transgender 5) Proportion of General – 12.5%, SC 14.2%, ST 41.5%, OBC 31.8% households 51.3% of the FHTC connections are under the name of a female member Average household size – 5.8 100% positive user experience in 0/5 measures

3. Findings

3.1. Functionality status of FHTC at household level

A. Overall Functionality* (in %)

Figure 8: Functionality of HH tap connection



* Fully Functional has been computed as = Adequate Quantity \cap Fully Regular Supply \cap Potable (Quality)

Please note: Henceforth, N_H=4575 implies all HHs where water was found on the day of the survey.

It has been found that 49 percent of the sampled HHs (N=4575) had working tap connections. Moreover, more than 4 out of 5 households (83 percent) received adequate (≥ 55 LPCD) water supply and more than 2 out of 3 received regular supply (70 percent) of water. The on-site testing and lab results for different quality parameters of the water indicates that 86% of the sampled households in the state receive potable water.

Out of the 9293 HHs sampled for the FHTC assessment, water quantity and quality test was carried out in 4575 due to non-availability of water in 51 percent HHs on the day of survey.

S. No.	District	Working tap connections for 7 days preceding the survey (%HH)	Adequate Quantity (≥ 55 LPCD) (% HH)	Fully Regular (% HH)	Potability (Quality)# (% HH)
1.	Latehar	94	99	87	83
2.	Sareikela And Kharsawan	90	94	73	99
3.	Lohardaga	87	94	75	71
4.	Purbi Singhbhum	80	100	87	96
5.	Ranchi	70	84	37	80
6.	Khuti	64	73	33	81
7.	Jamtara	62	80	92	99
8.	Palamu	57	56	64	100
9.	Simdega	53	91	77	55
10.	Garhwa	51	100	91	98
11.	Dumka	51	95	93	93
12.	Ramgarh	51	77	67	90
13.	Paschim Singhbhum	50	90	80	78
14.	JHARKHAND	49	83	70	86
15.	Koderma	46	73	59	70

S. No.	District	Working tap connections for 7 days preceding the survey (%HH)	Adequate Quantity (>=55 LPCD) (% HH)	Fully Regular (% HH)	Potability (Quality) [#] (% HH)
16.	Bokaro	46	76	61	95
17.	Hazaribag	42	82	66	89
18.	Gumla	41	89	79	57
19.	Sahibganj	37	60	78	99
20.	Deoghar	25	59	76	100
21.	Pakur	24	63	66	100
22.	Dhanbad	24	58	17	90
23.	Giridih	17	50	62	51
24.	Godda	14	18	53	95
25.	Chatra	9	79	47	100

Potable water has been considered basis testing of water samples through laboratory tests for physical, chemical, and bacteriological as given in Table 5 parameters (within acceptable/ permissible range) and onsite testing of pH. The details of laboratory test are mentioned in the table given above in the glossary.

JE-AES Affected	Aspirational Districts	Aspirational & JE-AES Affected
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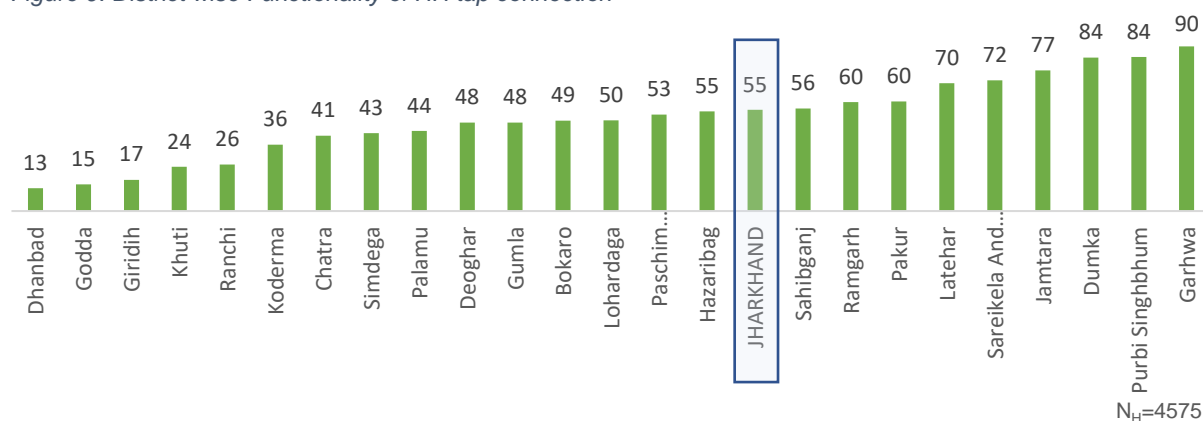
District level comparison across the districts indicate that Koderma, Bokaro, Gumla, Hazaribagh, Sahibganj, Deoghar, Pakur, Dhanbad, Giridh, Godda, and Chatra reported functionality less than the state average. The districts of Garhwa, Purbi Singhbhum, and Latehar FHTC provide more than 55 LPCD of water in more than 95 percent HHs.

More than 90 percent HHs in the districts of Jamtara, Garhwa and Dumka reported to regularly receive water through FHTC. Regular supply of water is less than 50 percent in the districts of Chatra, Ranchi, Khuti and Dhanbad.

Potability of water was found to be 100 percent in the districts of Chatra, Pakur, Deoghar, and Palamu. Whereas in the districts of Simdega, Gumla, and Giridih, the potability of water was found less than 60 percent.

B. District wise functionality status

Figure 9: District wise Functionality of HH tap connection



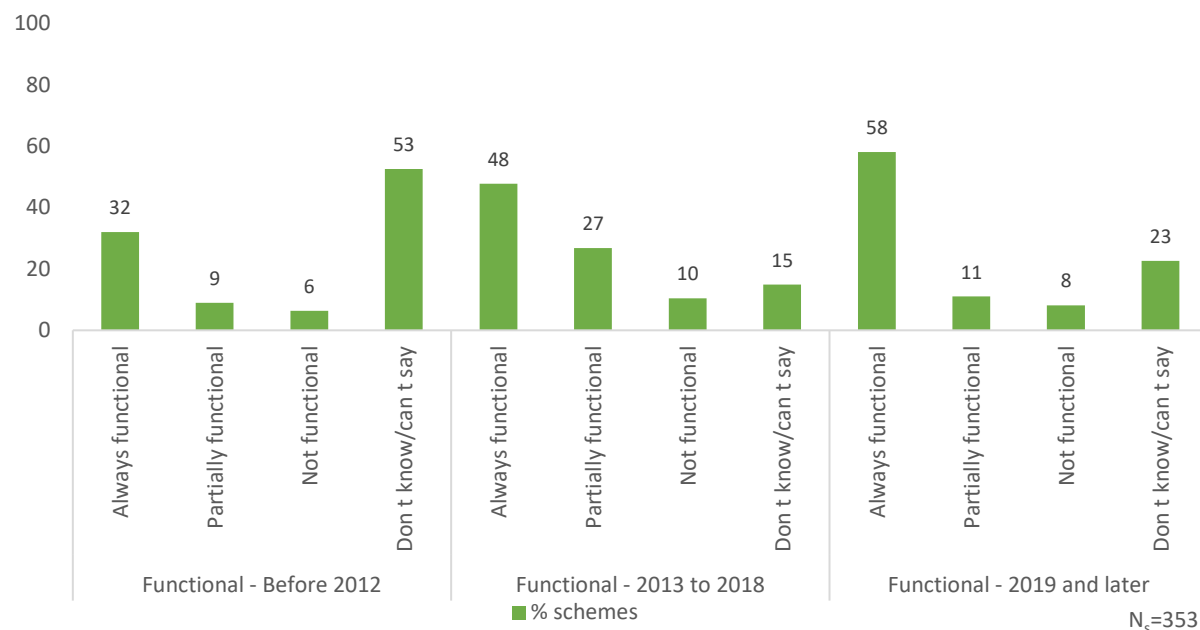
* 'Functionality' has been computed as the intersection of Adequate Quantity, Fully Regular Supply and Potable (Quality) for households wherein water supply was available at the time of survey, i.e., 4575 HHs.

55 percent HHs in the state were found to have functional HH tap water connection. Garhwa district reported 90 percent functional households in the state, followed by Purbi Singhbhum, and Dumka with more than 84 percent functionality. In the districts of Ranchi, Khuti, Giridih,

Godda, and Dhanbad, less than one-third of the households have functional HH tap water connection highlighting scope for improved service delivery.

C. Age vs functionality of schemes in the villages

Figure 10: Age vs functionality of schemes in the villages



More than 1 out 2 schemes are functional since 2019 which reflects a 21-point increase in till 2013-2018 and 5-point increase in 2019 and later.

3.2. Quantity, Regularity, and Quality of Water

Under JJM, functionality is defined as having infrastructure, i.e., household tap connection providing water in adequate quantity (55 LPCD or more) of prescribed quality on regular basis (every day or as decided by GP and/ or its sub-committee) with adequate pressure. It also includes long-term source and system sustainability. For the purposes of this survey, the quality parameters are defined and measured on a set of 15 indicators (of which 2 indicators are tested on-site and for 13 indicators water samples have been sent to the laboratories), as mentioned in the glossary section.

A. Water quantity measured as LPCD (Litres per Capita per Day)

78% HHS reported receiving more than 55 LPCD of water.

Figure 11: Quantity of water received by households

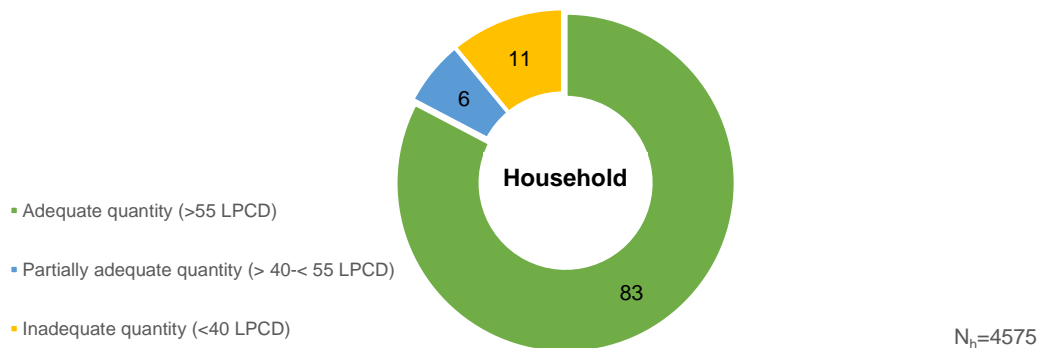
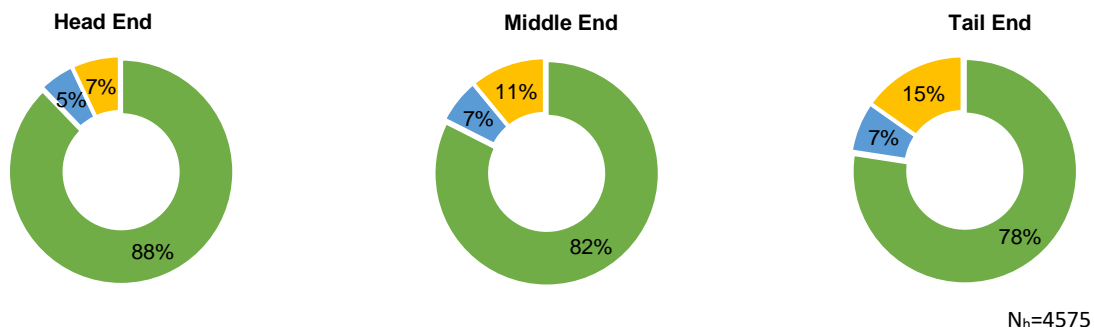


Figure 11: Quantity of water received across head, middle and tail end households

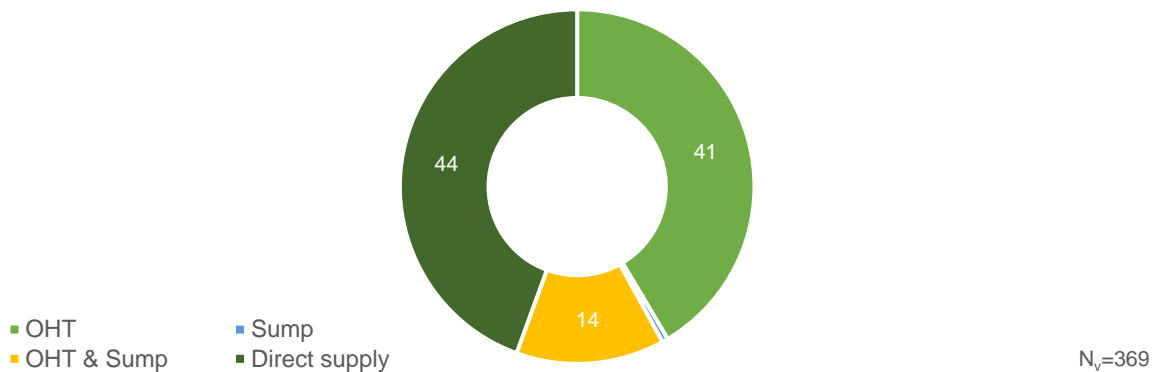
Quantity of water received across head, mid, and tail end HHS



The quantity of water received across the head, middle, and the tail end was observed to have declined, and almost three-fourth (83%) of the sampled households received water in adequate quantity, i.e., greater than or equal to 55 LPCD.

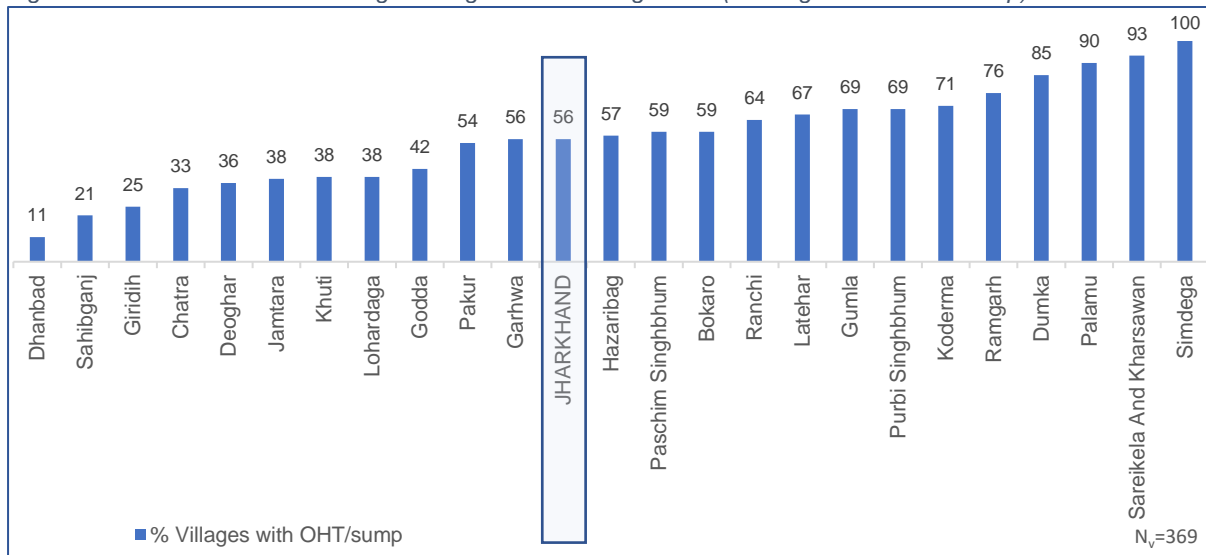
Types of water storage arrangements at village level (in %)

Figure 12: Pipe water supply storage available in



Less than one out of two respondents in the state reported water being directly supplied. And in 41 percent reported water being stored in overhead tanks.

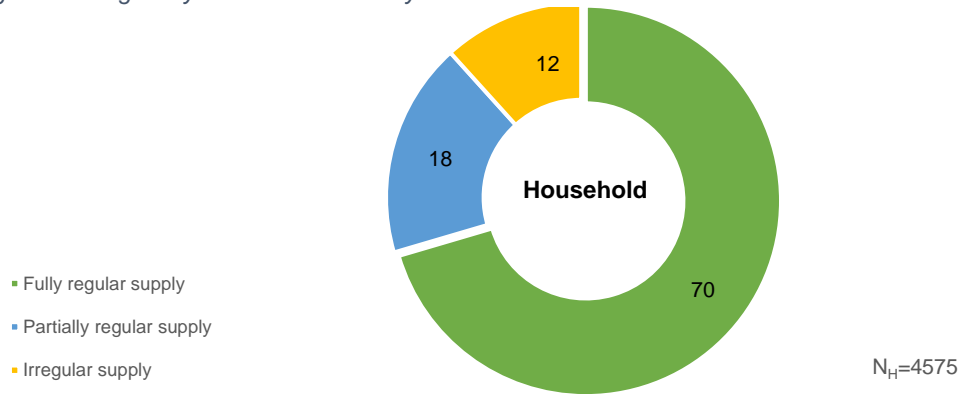
Figure 13: District wise water storage arrangements at village level (% villages with OHT/ Sump)



56 percent villages in the state have either an OHT or a sump for storing water for supplying to the households. Ramgarh is the district where 71 percent villages have either an OHT or a sump, followed Koderma, Hazaribagh and Paschim where more than two-fifth of the villages have facilities to store water for supplying to the households.

B. Regularity of water supply to villages and households

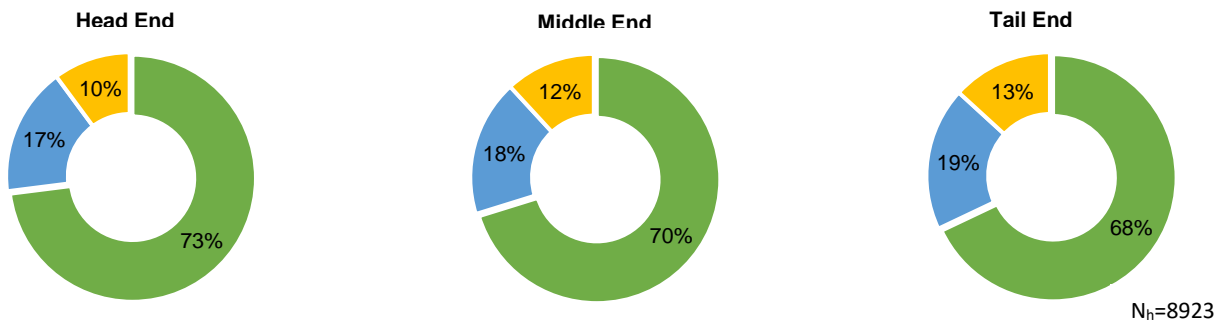
Figure 14: Regularity of water received by households



70% HHs receive a regular supply of water (as per agreed schedule)

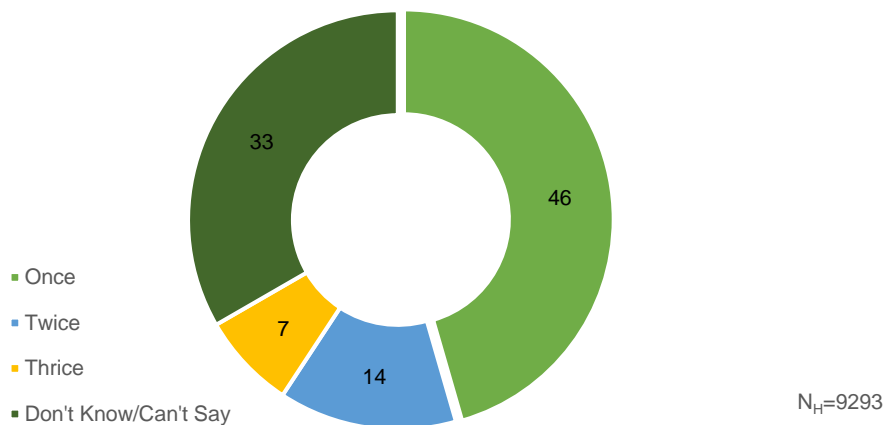
Regularity of water received across head, mid, and tail end HHs

Figure 15: Regularity of water received across head, middle and tail end households



Water is more regularly available at the tail-end households of the PWS in comparison to the head end.

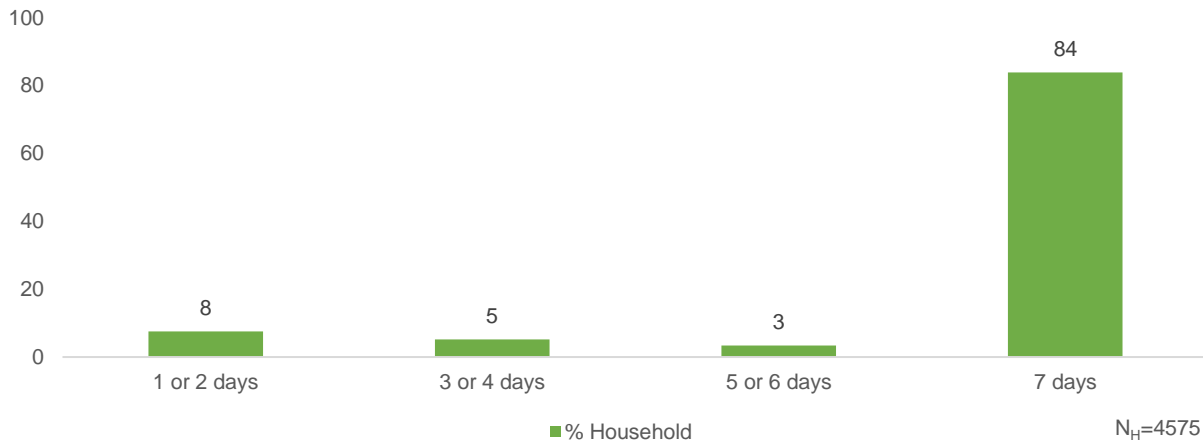
Figure 16: Average no. of times water is supplied in a day



HHs in **44% of districts** receive water once a day. The average duration of water supply across the state was reported to be **3 hours per day**.

Average water supply days in a week to households

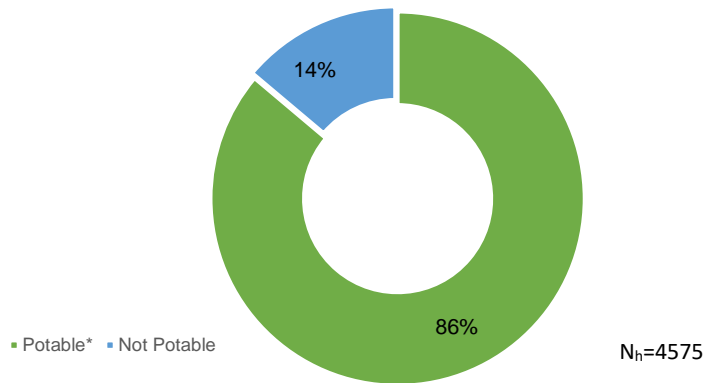
Figure 17: Average number of days households receive water supply in a week (in %)



District wise estimates show that more than 90 percent reported regular supply of water in Dumka, Jamtara, and Garhwa. Whereas, Chatra, Ranchi, Khuti and Dhanbad provides regular water in less than 50 percent households.

C. Water quality – Potability

Figure 18: Potable water received by households



*Potable water has been considered basis testing of water samples through laboratory tests for physical, chemical and bacteriological as given in Table 5 parameters (within acceptable/ permissible range) and onsite testing of pH. The details of laboratory test are mentioned in the table given above in the glossary.

Among the sampled households in Jharkhand where water was found on the day of the survey, the potability of water was found to be 86%.

Table No. 4: Village quality parameters reported within permissible range (% sample within permissible range)

Quality Parameters (N _v =369)	Water Samples Tested from Public Institutes			
	AWC	HF	Schools	Others
pH (on-site)	100	100	100	100
Turbidity	100	100	98	100
Total Hardness	100	100	100	100
Total Alkalinity	100	100	100	100
Chloride	100	100	100	100
Ammonia	Not Tested			
Iron	100		97	100
Nitrate			100	
Sulphate	Not Tested			
Total Dissolved Solids	100	100	100	100
Bacteriological Test (Absence)			100	
Fluoride	100	100	99	100
Arsenic			96	

Table No. 5: Household water quality parameters reported within permissible range (in % sample within permissible range)

The number of water samples submitted to the laboratory for the calculation of the different parameters was the same as mentioned in the rest of the report (sample size for HH water submitted to labs=4575). However, the below data are presented based on the results received from the laboratories and the respective base sizes are mentioned for each of the parameters separately.

Quality Parameters	No of water samples tested	% Samples within permissible range
pH (on-site)	4575	4575
Turbidity	2791	98
Total Hardness	3839	100
Total Alkalinity	3719	100
Chloride	2430	100
Ammonia	Not Tested	
Iron	1071	96
Nitrate	1284	100
Sulphate	Not Tested	
Total Dissolved Solids	3062	100
Bacteriological Test (Absence)	250	100
Fluoride	847	100
Arsenic	480	99

Safeguarding piped water supply for unforeseen bacteriological contamination- Presence of Residual Chlorine (RC)

The Residual Chlorine (RC) in the state of Jharkhand was found in 14% samples. Also, 3% samples were having RC outside range and 83% samples, had no RC. All the collected water samples passed the bacteriological contamination test.

The Residual Chlorine in piped water supply is one of the most important preventive actions to assure quality of water against bacteriological contamination from source to consumption. The presence of residual chlorine within permissible limits is indicator of well-maintained and healthy piped water supply system.

It is advised that behavioural change communication campaigns on appropriate dosage of residual chlorine is held in all villages and monitoring system for chlorine dosing is established. The FTK must have residual chlorine testing facility for effective WQM&S.

Comment on functioning of District Lab:

The district lab tested water samples for 11 water quality parameters. 4621 water samples were submitted, and 4327 water samples were tested, and reports made available. The turnaround time for testing was more than 48 hours in most cases. Given this feedback, it can be conferred that these labs have limited scope to take up samples from the general public at large on a regular basis.

Sl. No	District	Lab available	HH surveyed	Samples submitted	Report received	Overall lab experience
1	Ranchi	Yes	384	271	253	The labs did not have capacity to test more than 40 number of samples and had issues of human resource, reagents etc
2	Khuti	Yes	390	250	249	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
3	Lohardaga	Yes	357	320	301	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
4	Gumla	Yes	385	161	157	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
5	Simdega	Yes	380	202	201	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
6	Palamu	Yes	383	219	205	The labs did not have any issue with testing the number of water samples submitted nor had any

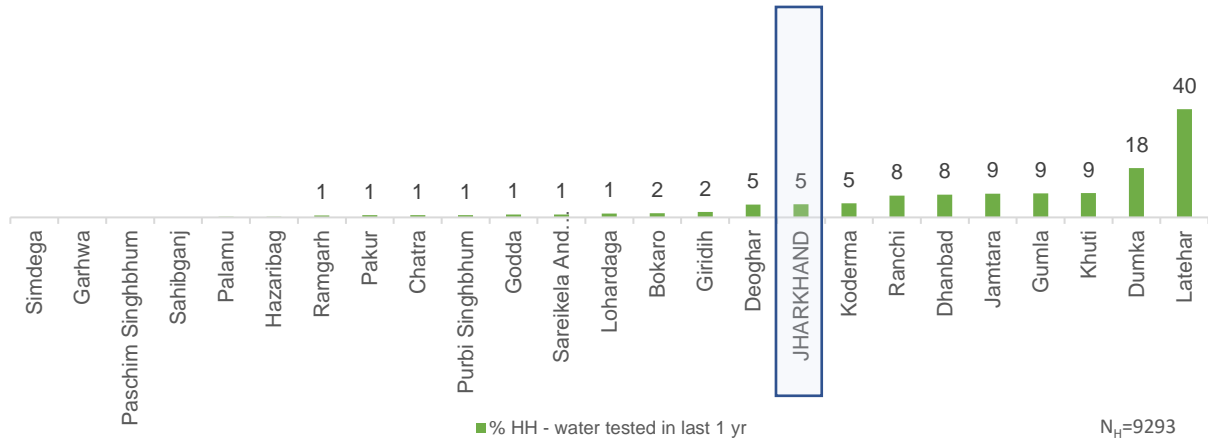
Table No. 6: Performance of Labs						
Sl. No	District	Lab available	HH surveyed	Samples submitted	Report received	Overall lab experience
						issues with human resource, reagents etc
7	Latehar	Yes	356	334	286	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
8	Garhwa	Yes	361	187	174	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
9	Paschim Singhbhum	Yes	395	197	189	The labs did not have capacity to test more than 40 number of samples and had issues of human resource, reagents etc
10	Sareikela And Kharsawan	Yes	378	351	343	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
11	Purbi Singhbhum	Yes	457	364	364	The labs did not have capacity to test more than 40 number of samples and had issues of human resource, reagents etc
12	Dumka	Yes	352	181	136	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
13	Jamtara	Yes	388	240	235	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
14	Sahibganj	Yes	390	146	143	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
15	Pakur	Yes	379	91	50	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
16	Godda	Yes	382	55	49	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc

Table No. 6: Performance of Labs						
Sl. No	District	Lab available	HH surveyed	Samples submitted	Report received	Overall lab experience
17	Hazaribag	Yes	368	154	135	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
18	Ramgarh	Yes	450	228	226	The labs did not have capacity to test more than 40 number of samples and had issues of human resource, reagents etc
19	Chatra	Yes	379	34	31	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
20	Koderma	Yes	382	185	175	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
21	Giridih	Yes	437	76	72	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
22	Bokaro	Yes	385	181	171	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
23	Dhanbad	Yes	393	99	87	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc
24	Deoghar	Yes	382	95	95	The labs did not have any issue with testing the number of water samples submitted nor had any issues with human resource, reagents etc

Households reported that their HH tap-water was collected and tested in the last one year

5% of HHs reported that their HH tap-water was collected and tested in the last one year.

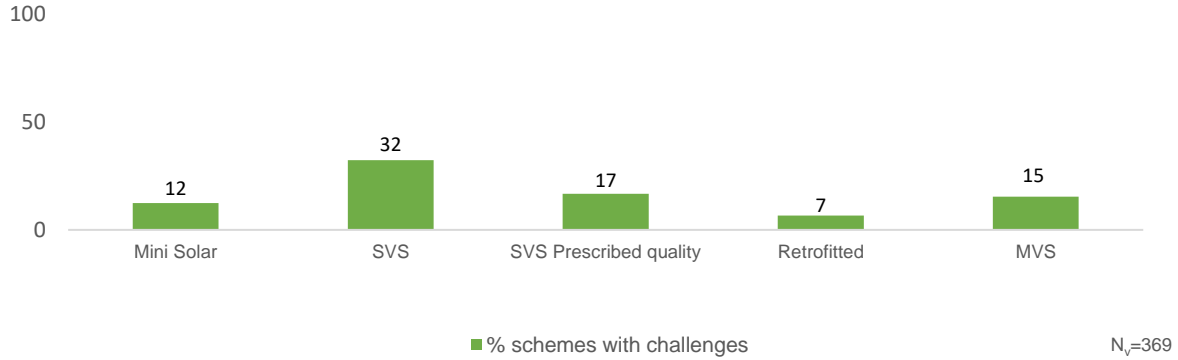
Figure 19: Households reported that their HH tap-water was collected and tested in the last one year



3.3. Operation and Maintenance (O&M) of schemes at village level

The **SVS scheme** faced the most challenges (32%) in comparison to the other schemes in the state.

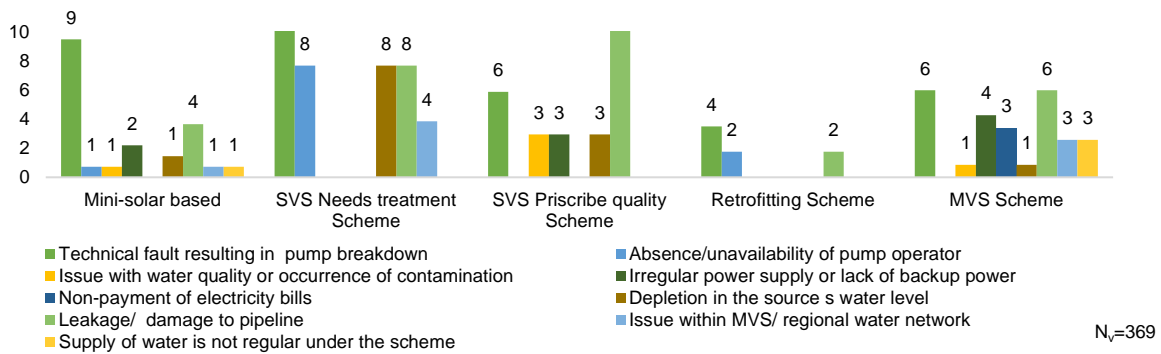
Figure 20: Schemes reported to have faced challenge in village



Type of challenge faced by the schemes

The most faced problem varied from one scheme to another. However, 'leakage/damage to pipeline' is a problem that was found unanimously in all the schemes.

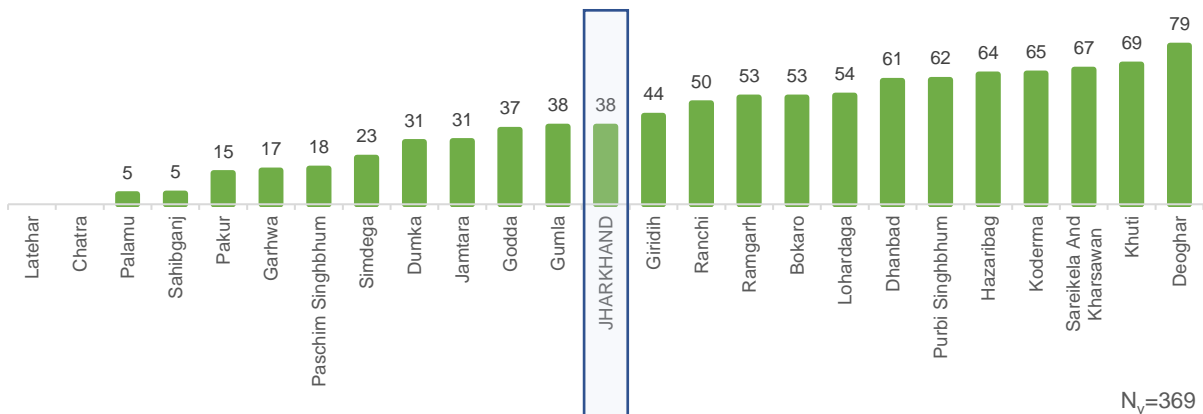
Figure 21: Type of challenge faced by the schemes



A. Presence of VWSC/Pani Samiti

38% of villages in the state reported to have a VWSC or a Pani Samiti.

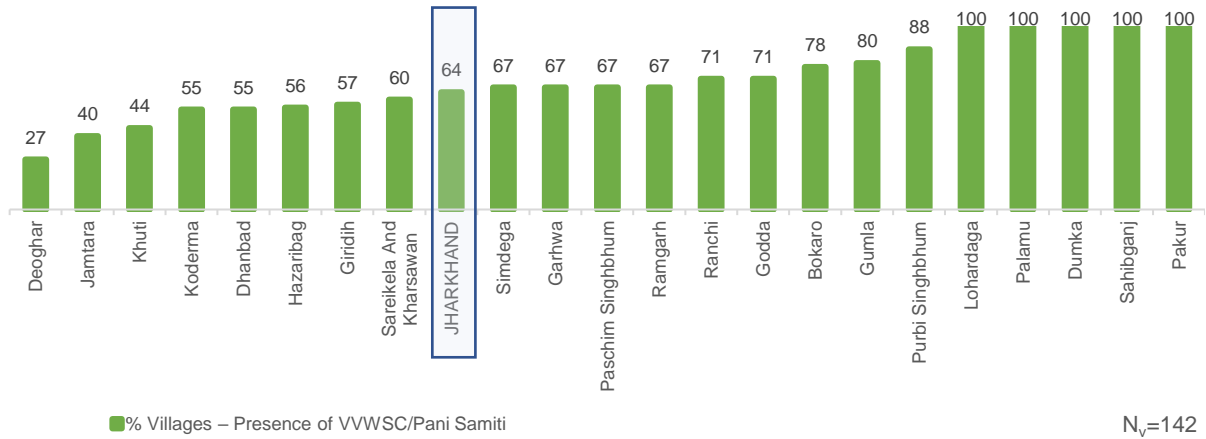
Figure 22: Villages where VWSC/ Pani Samiti is present



B. Presence of VWSC/Pani Samiti with more than 50% female members

64% of villages in the state reported to have a VWSC or a Pani Samiti with more than 50% female members.

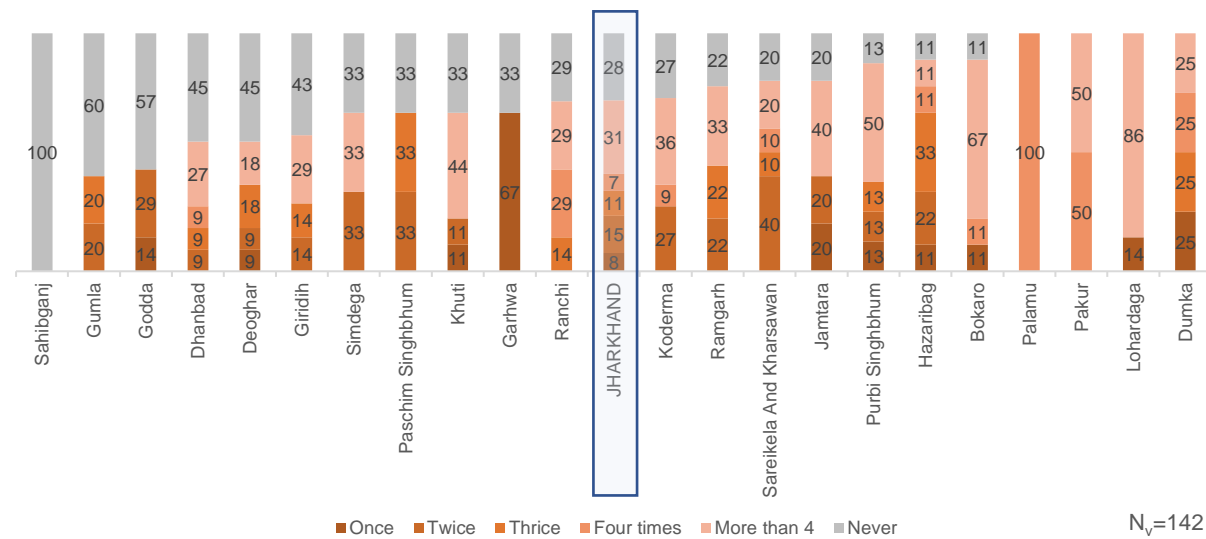
Figure 23: VWSC/ Pani Samiti with more than 50 percent female members



C. VWSC Meetings in last one year

Across the villages in the state, that reported to have VWSC/Pani Samitis (142 villages), more than 4 meetings in last one year was reported the most (31%)

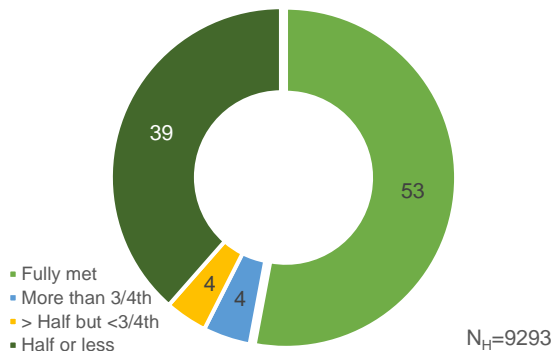
Figure 24: VWSC meetings held in last one year



3.4. Utilization of water at HHs for drinking and other activities

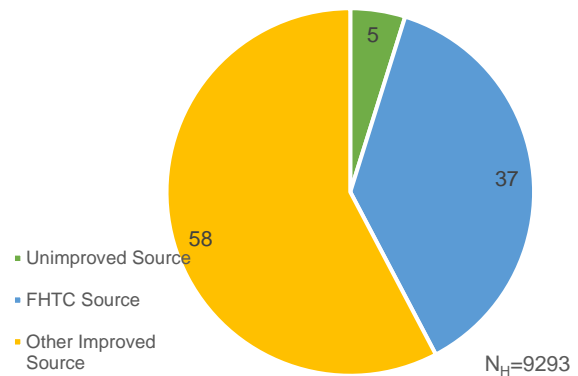
53% of HHs reported that their daily requirement of water was being met by HH tap connections

Figure 25: Daily household's requirement of water being met by FHTC



37% HHs reported HH tap connections as their primary source of drinking water

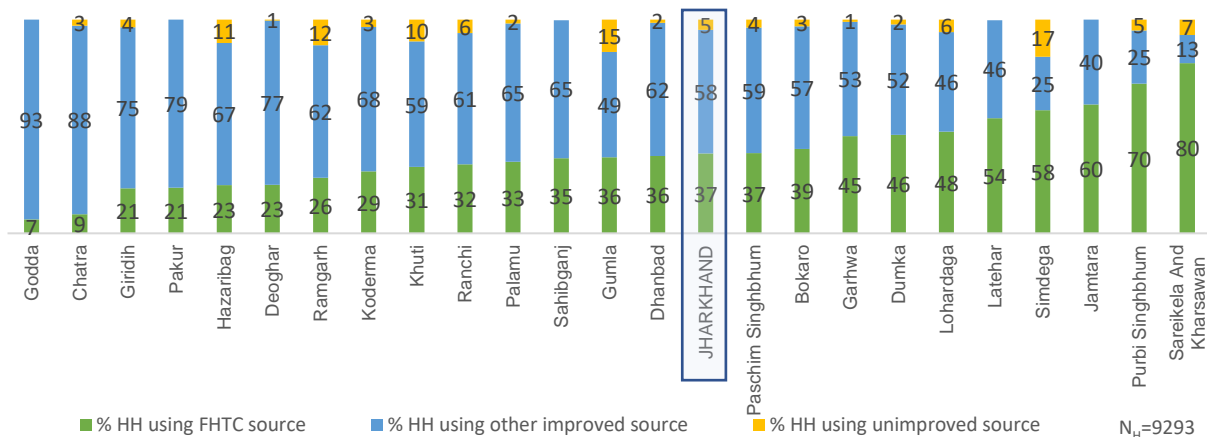
Figure 26: Households reported FHTC as primary source of drinking water



More than 1 out of 2 (53%) HHs reported their daily requirement of water being fully met by the HH tap connections. And 37 percent HHs reported used household tap connection for drinking water (primary source). About 58 percent of the HHs even though have reported household tap connections to fully meet their requirements, were not found using the same for drinking purposes.

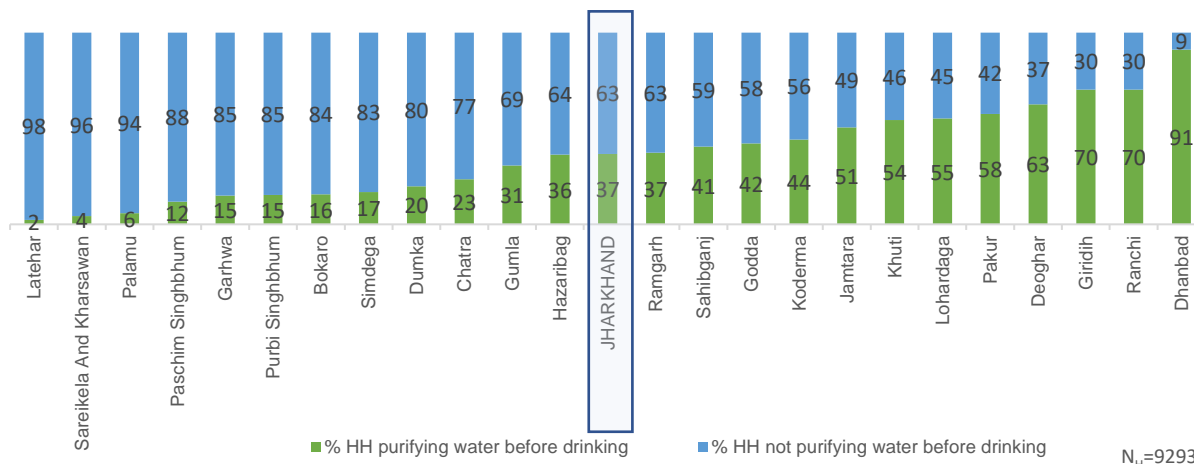
Overall, **95% of HHs** reported using improved primary source of drinking water, out of which **37% of HHs** reported HH tap water as their primary source.

Figure 27: District wise distribution of household's reported FHTC as primary source of drinking water



A. Households who practice purifying of water before drinking

Figure 28: Households who practice of purifying water before drinking

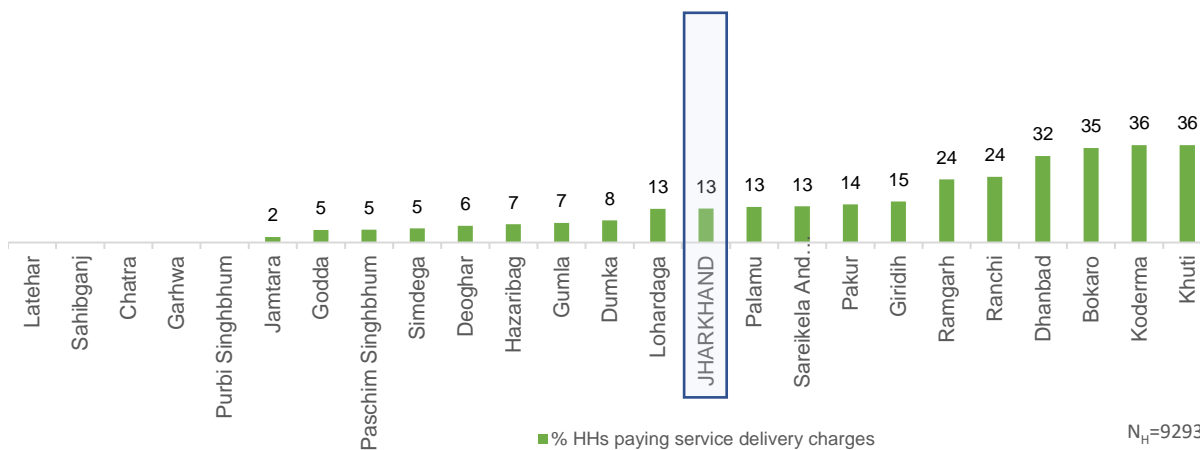


Practice of purifying water before drinking was reported the most in Dhanbad (91%) where 95% HHs reported using HH tap water as primary drinking water source, while the least was reported in Latehar (2%) where 100% HHs reported using HH tap water as a primary drinking water source.

B. Households paying water service delivery charges

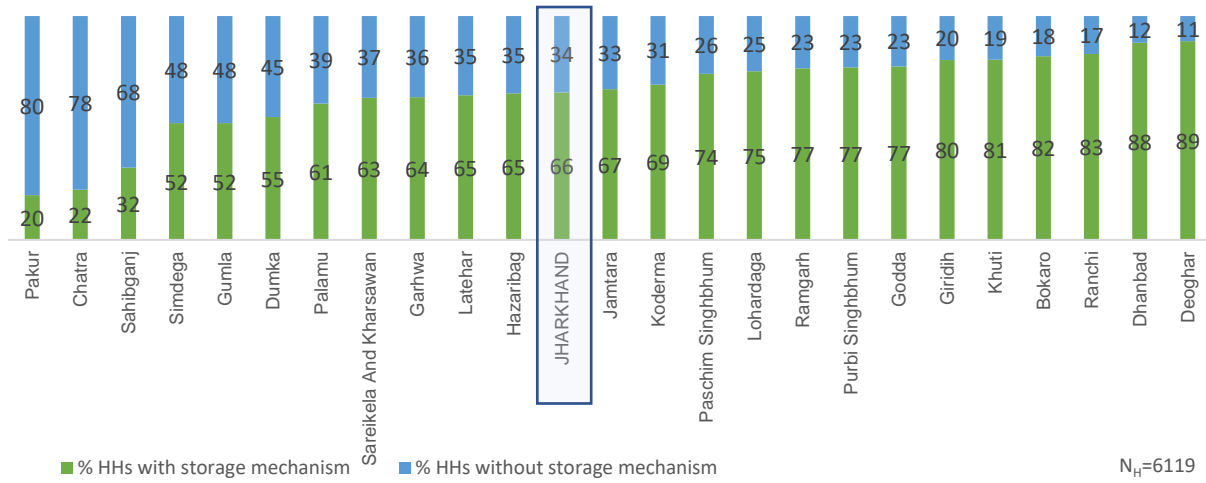
In Jharkhand, around 13% of the sampled households were found to be paying service delivery charges, Khuti being the district with the highest percentage of such households (36%) and Purbi Singhbhum, Garhwa, Chatra, Sahibganj, and Latehar being the districts in which households reported not paying any water service delivery charges.

Figure 29: Households paying water service delivery charges



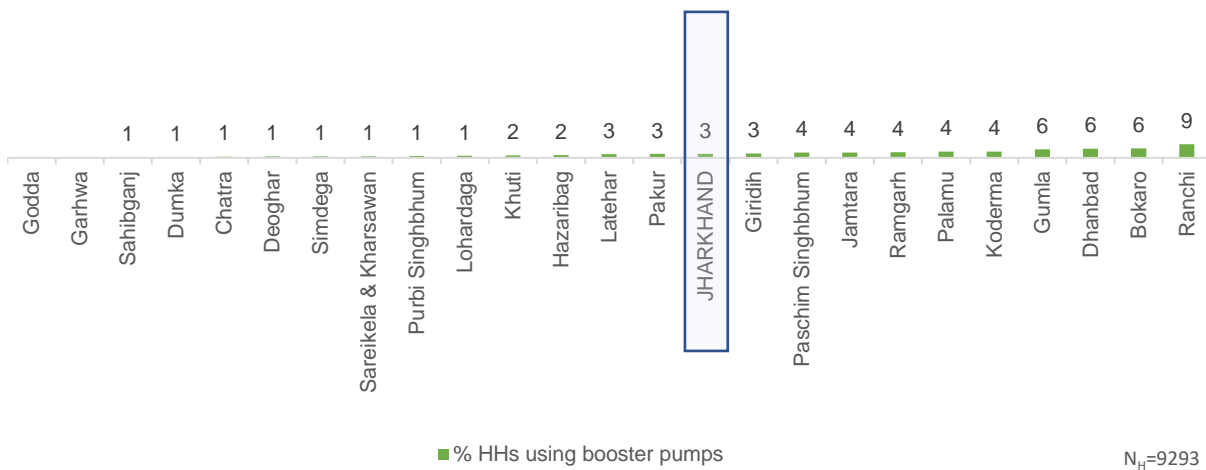
C. Storage mechanism used by households

Figure 30: Households reported using some storage mechanism



D. Households using booster pumps

Figure 31: Households reported to use of booster pumps

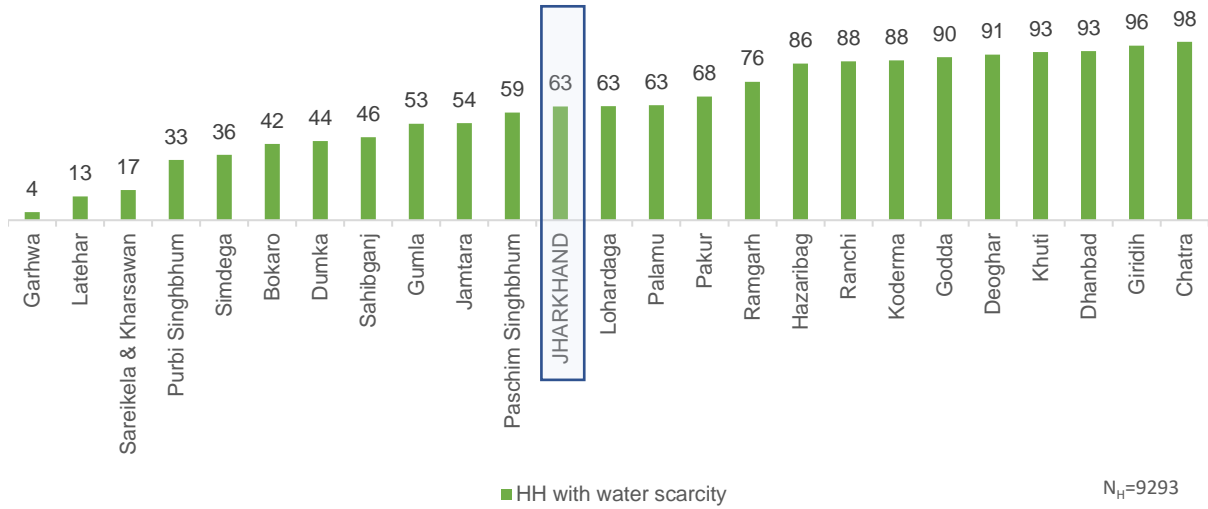


Overall, **3% HHs** reported using booster pumps to maximize the water flow through their piped water connections. Ranchi and Bokaro reported 9% and 6% of HHs using booster pump in the state while Garhwa and Godda reported no HH booster pump.

E. Households who faced shortage of water

In the state, **63% HHs** faced shortage of water during any time of the year.

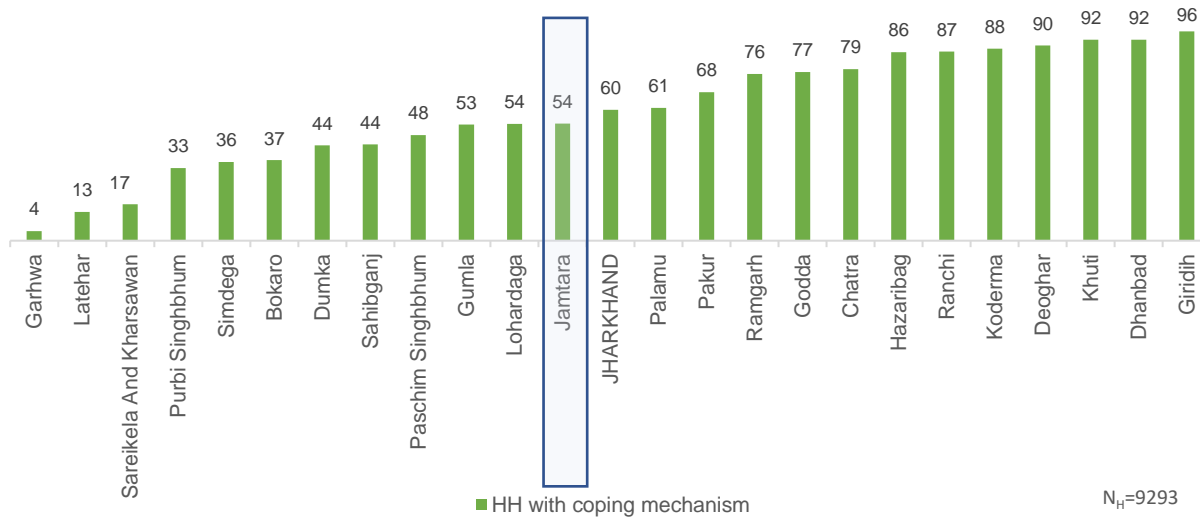
Figure 32: Households who faced water scarcity



F. Households with a mechanism to cope water scarcity

In the state, **63% HHs** faced shortage of water during any time of the year, while **60% HHs** reported having some mechanism to cope with scarcity of water.

Figure 33: Households reported to have some mechanism to cope with scarcity of water

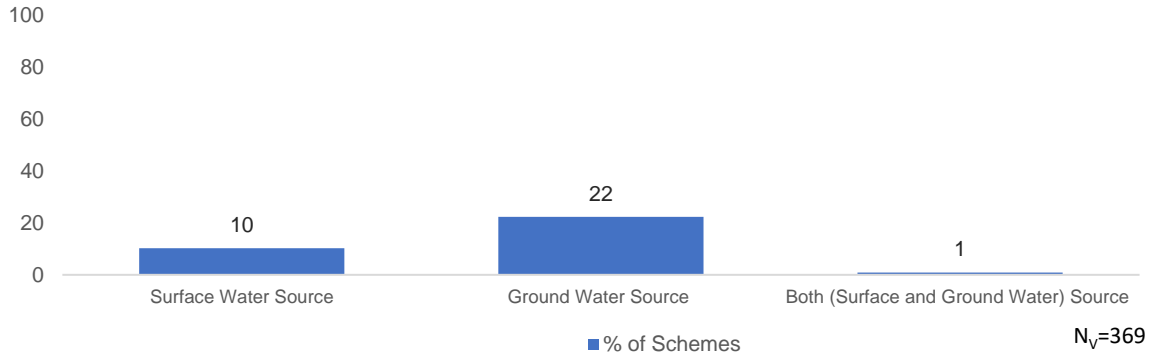


3.5. Source sustainability at the village level

Schemes based on surface and ground water

10% of schemes reported to be based on surface water source while **22% of schemes** reported to be based of ground water sources.

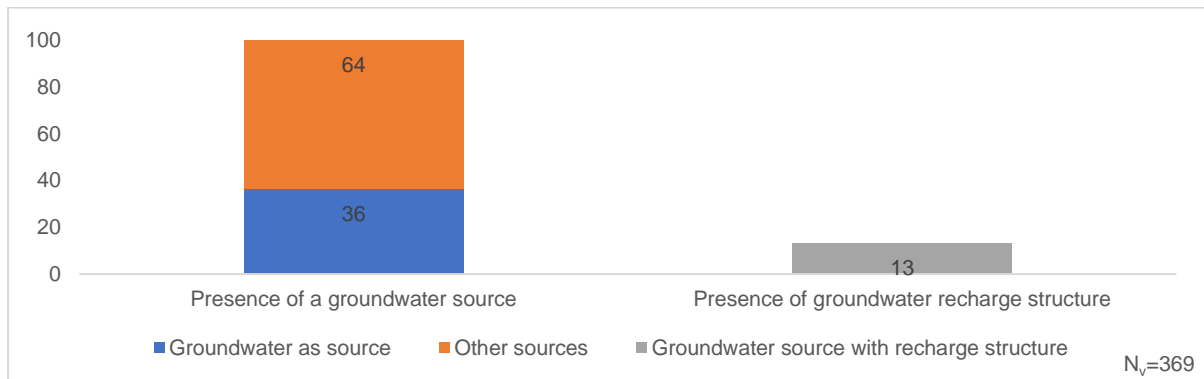
Figure 34: Schemes based on water source in village



**'Surface Water Source' is Stream, Spring, Glacier, River, lake, pond etc. and Groundwater Source is open well, borewell, tube well, handpump, spring, etc.*

Presence of a groundwater source and groundwater recharging structure

Figure 35: Villages reported the presence of groundwater sources and among those how many reported to have a recharge structure

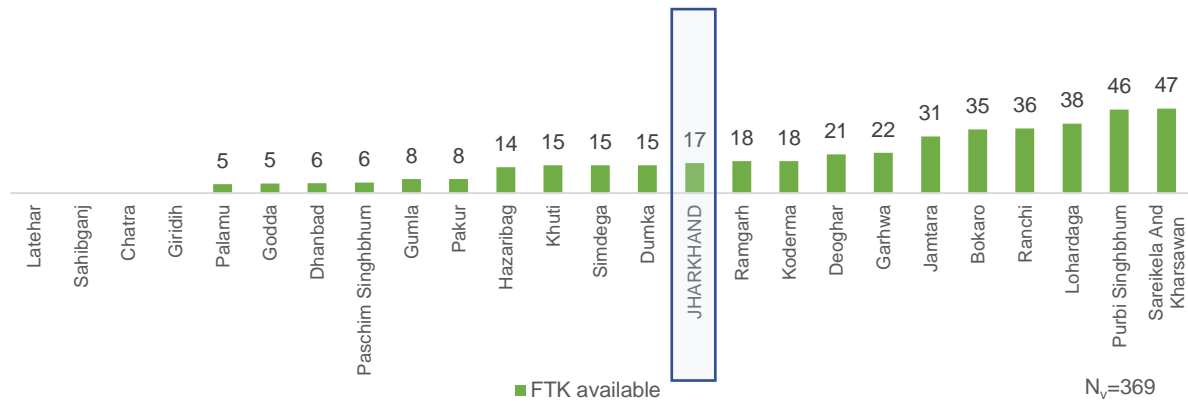


In the state, **36 percent villages** reported the presence of groundwater sources like improved dug wells and borewells. However, 13 percent of villages reported (i.e., 49 villages) reported having a recharge structure.

3.6. Water quality monitoring and surveillance in the villages

A. Water quality management by VWSC: Availability of FTK with the Pani Samiti/ VWSC

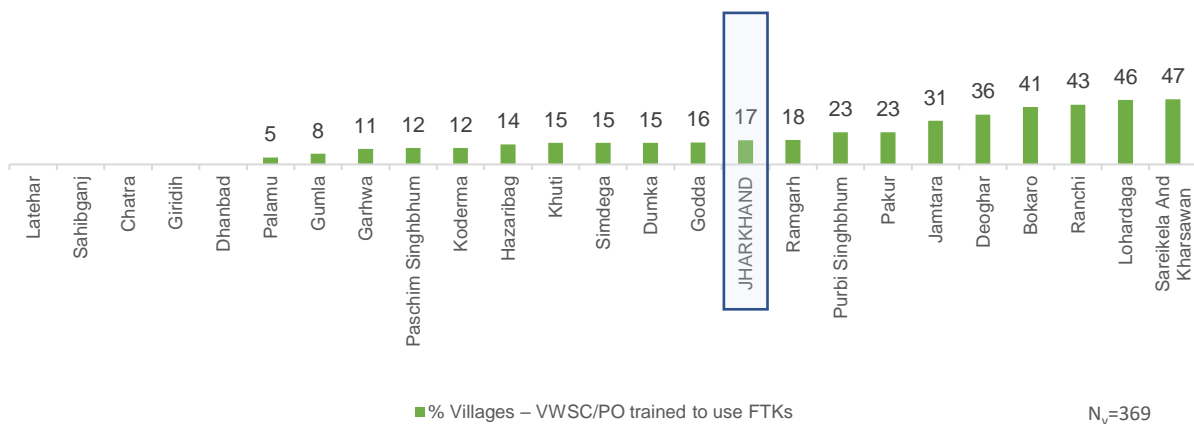
Figure 36: Availability of field test kits with VWSC/ Pani Samiti



With regards to water quality testing in the village by VWSC, 17% villages in the state reported having available field test kits. Sareikela And Kharsawan, and Purbi Singhbhum reported more than 45% villages having available field test kits for water quality testing, while Giridih, Chatra, Sahibganj, and Latehar reported 0%.

B. Persons trained to use field test kits

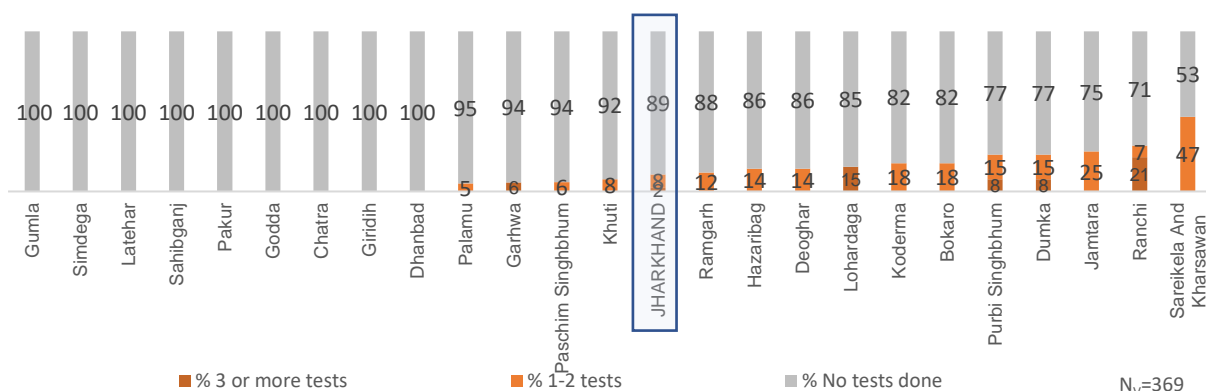
Figure 37: Persons trained to use field test kits



Overall, **17% of villages** in the state reported to have either VWSC/Pani Samiti or pump operator trained to use field test kits for testing the quality of water on-site. Sareikela And Kharsawan, and Purbi Singhbhum reported more than 45% villages having available field test kits for water quality testing, while Giridih, Chatra, Sahibganj, and Latehar reported 0%.

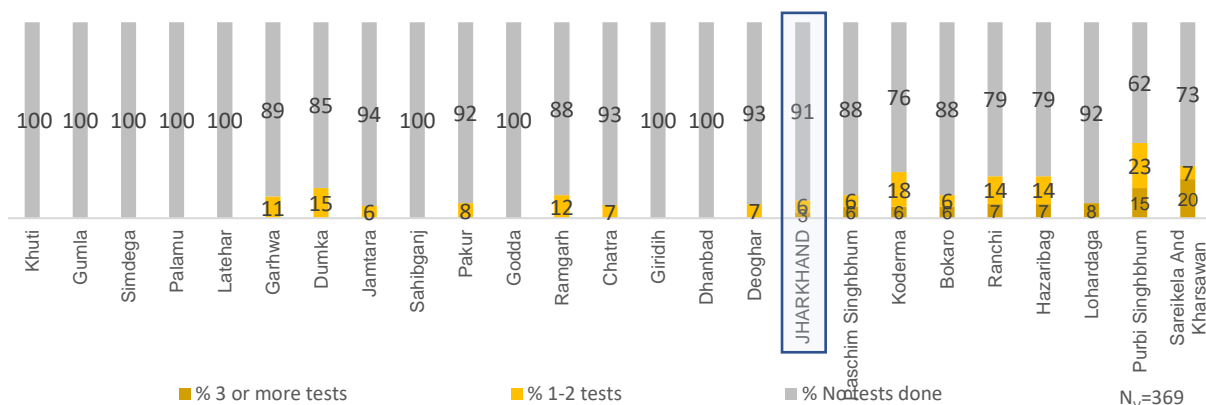
C. Water quality management by VWSC: Frequency of testing using FTK

Figure 38: Frequency of testing using FTK in villages



Across the state, about one-tenth of the total sampled villages (8%) reported that the quality of water (at different points in the respective villages) was checked at least one to two times using FTKs in last one year. Among the districts, Sareikela and Kharsawan had the highest proportion of such villages, wherein 47% of its villages reported using FTKs one or two times in last one year.

D. Water quality management by VWSC: Frequency of lab testing

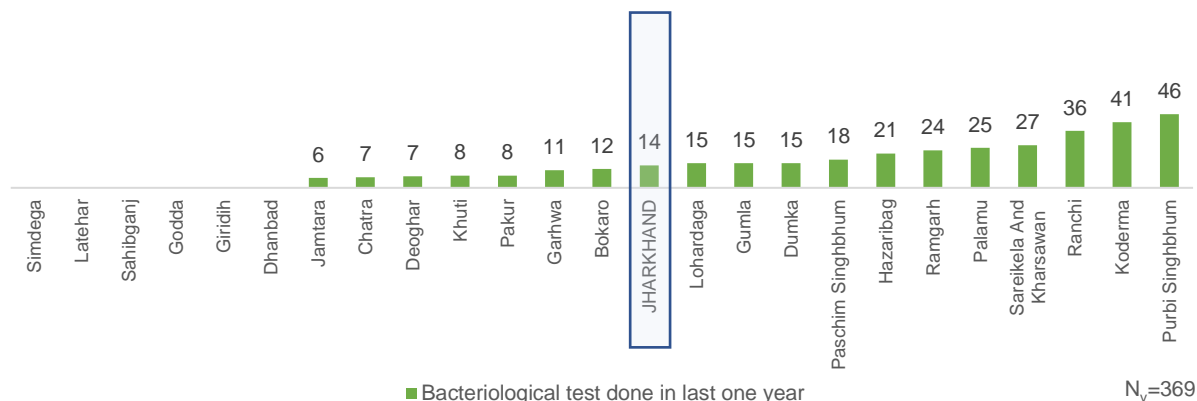


Across the state, less than one-tenth of the total sampled villages (6%) reported that the quality of water (at different points in the respective villages) was checked at least one to two times through laboratories in last one year. Among the districts, Sareikela and Kharsawan had the highest proportion of such villages, 20% of its villages reported tests through laboratories - three or more times in last one year.

E. Water quality management by VWSC: Bacteriological test done in last one year

With regards to water quality testing in the village by VWSC, **14% villages** in the state reported having bacteriological test done in the last one year.

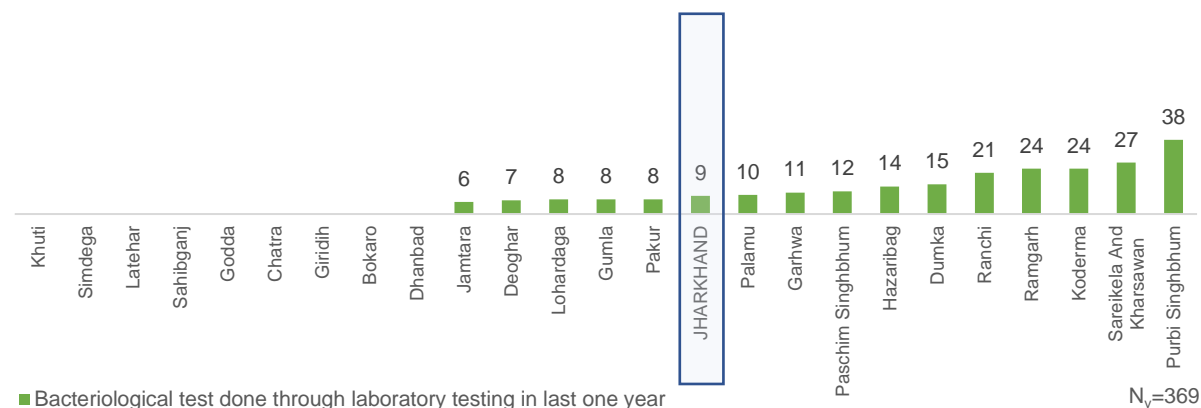
Figure 40: Percent villages in which Bacteriological test was done in the last one year



F. Water quality management by VWSC: Bacteriological test done through laboratory testing in the last one year

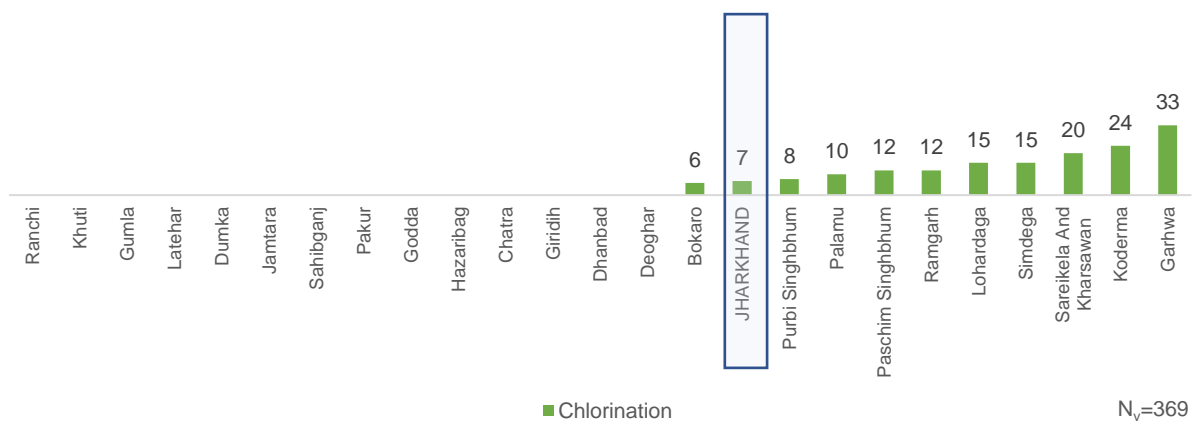
Laboratory based bacteriological tests, in last one year, was reported by 9% of sampled villages. All sampled villages from the districts Purbi Singhbhum, Sareikela And Kharsawan, Kodema, Ramgarh and Ranchi reported to have had more than 20 percent of bacteriological tests done through laboratories in last one year.

Figure 41: Bacteriological test done through laboratory testing in the last one year



G. Water quality management by villages: Availability of chlorination mechanism in the village

Figure 42: Villages having a mechanism for chlorination

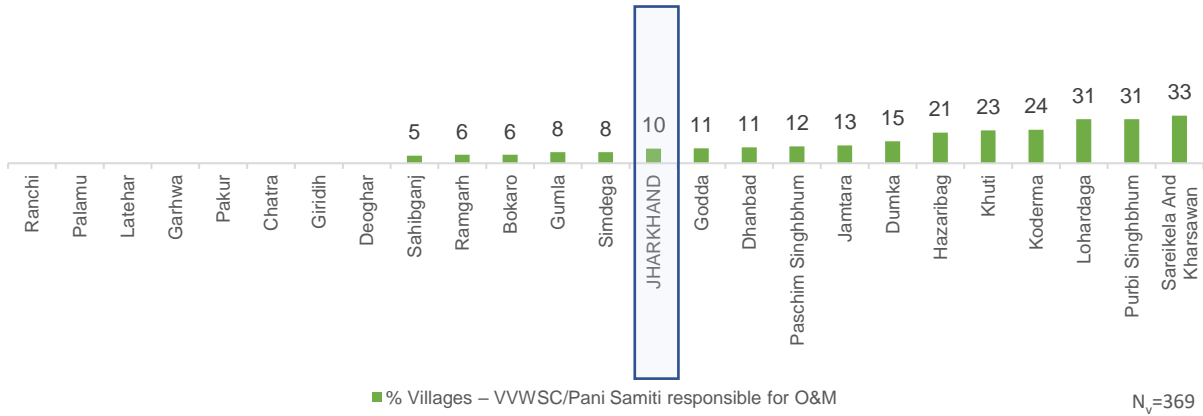


7% villages reported that there is availability of chlorination mechanism in the village but during onsite testing of water at household level no households tested to have for presence of chlorine.

3.7. Management of water service delivery at village level

A. VWSC/Pani Samiti responsibility for O&M of PWS schemes

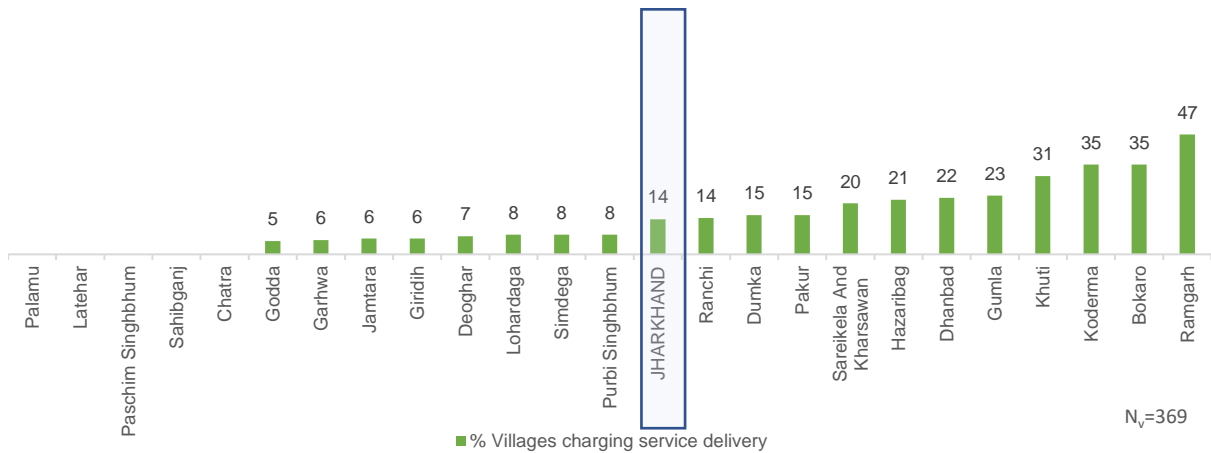
Figure 43: VWSC/Pani Samiti responsibility for O&M of PWS schemes



In the state, **10% villages** that have VWSC/Pani Samiti reported to be responsible for operation and maintenance of PWS. Sareikela And Kharsawan, Purbi Singhbhum, and Lohargarh districts reported more than 30 percent VWSC/Pani Samiti are responsible for operation and maintenance of PWS.

B. Villages levying water service delivery charges from households

Figure 44: Villages levying water service delivery charges from households



Overall, **14% of villages** in the state levy charge for water service delivery to households whereas only **13% HHs** reported paying water service delivery charges at the households.

C. Convergence of JJM activities with other schemes in villages

Figure 45: Village reported convergence of JJM activities with other schemes in the village

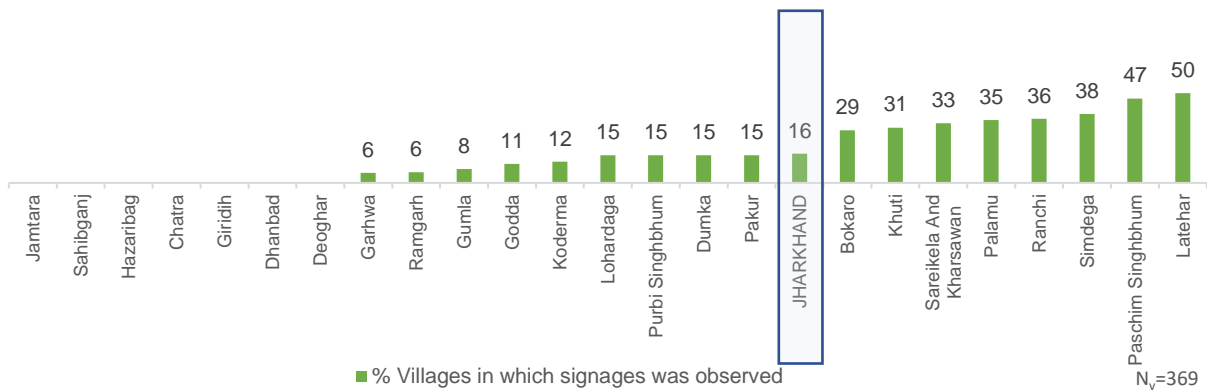


In the state, only **1% villages** in the state reported convergence of activities under JJM with other government programmes/ schemes on skill development, capacity building and training, and awareness generation.

D. Villages where signages were observed

Signages about JJM were observed in 16% of the sampled villages. District Latehar had the highest proportion of villages where signages were observed (50%).

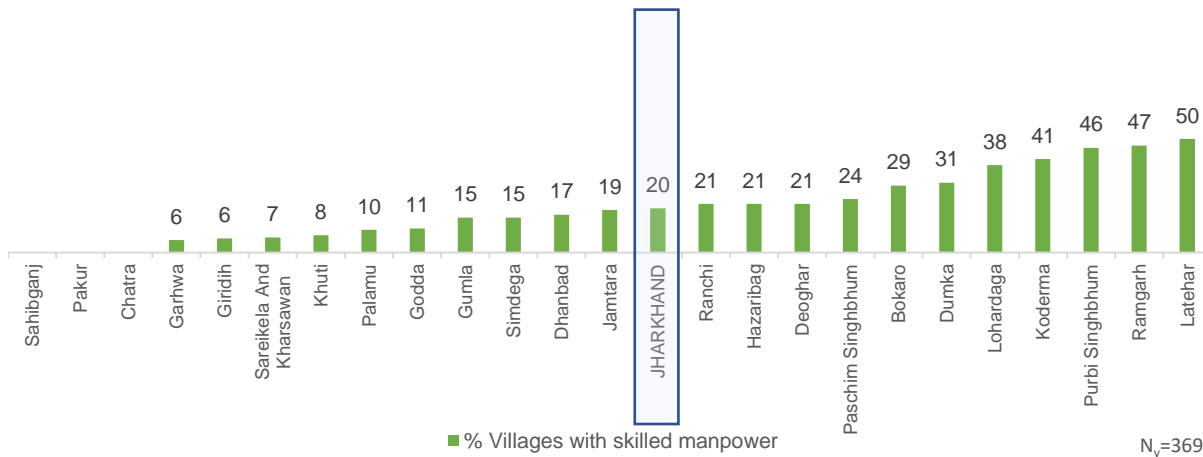
Figure 46: Villages in which signages about JJM was observed



3.8. Status of Operation & Maintenance

A. Villages with skilled manpower for operation and maintenance (O&M) of PWS schemes

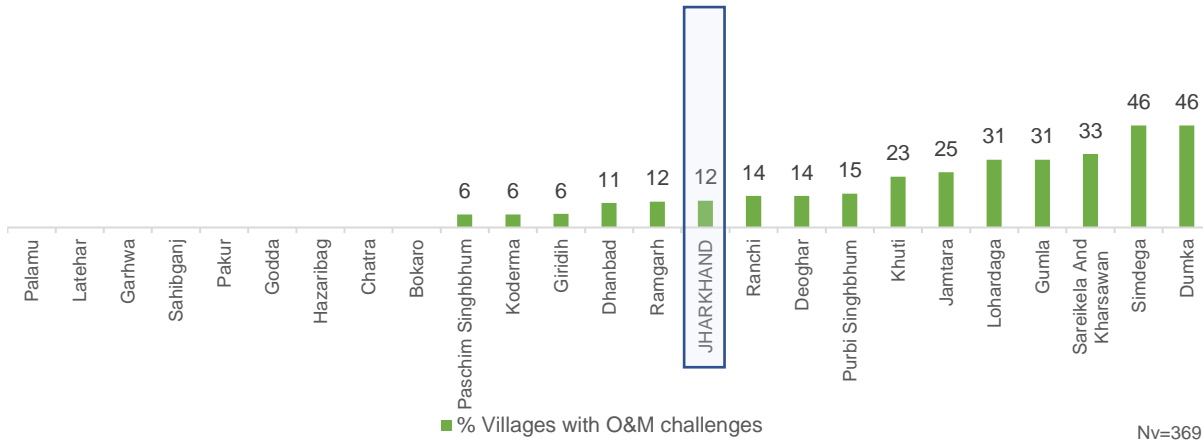
Figure 47: Villages reported having skilled manpower for O&M of PWS schemes



Across the state, **20% villages** in the reported having identified skilled manpower for O&M of PWS schemes, the most reported to be in Latehar(50%) and nothing was reported in Chatra, Pakur and Sahibganj.

B. Villages with O&M challenges

Figure 48: Villages reported having faced O&M challenge

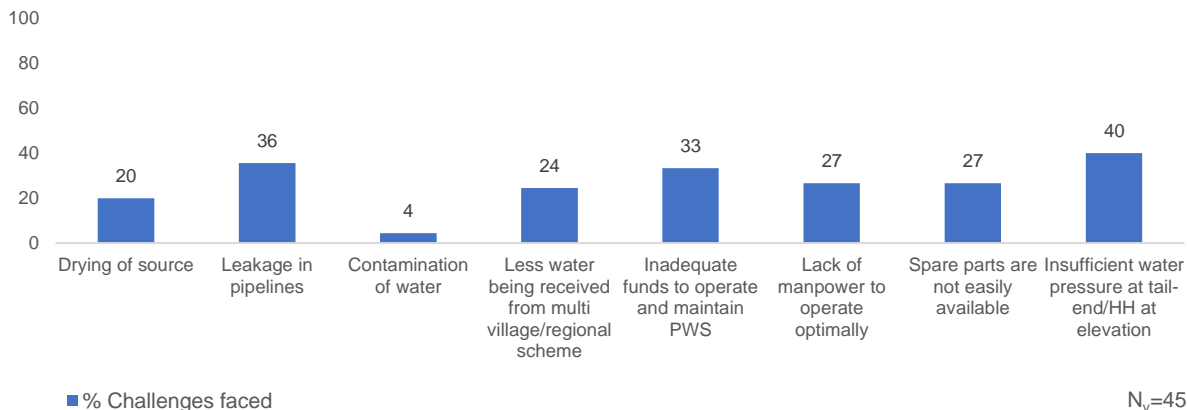


In the state, **12% of villages** in the state reported to have faced challenges with respect to O&M of PWS schemes

C. Details of challenges faced

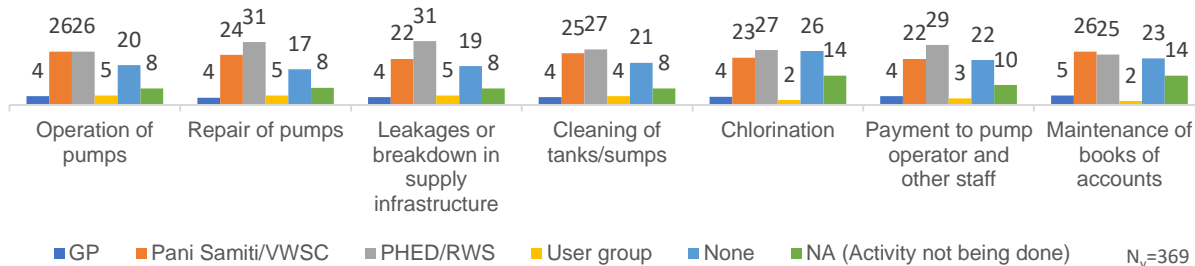
Out of the 12% of villages that had faced challenges with respect to O&M of PWS schemes (45 villages), 'insufficient water pressure' was attributed the most – at 40%.

Figure 49: Details of O&M challenges faced by village



D. Responsible for O&M

Figure 50: Different bodies responsible for O&M

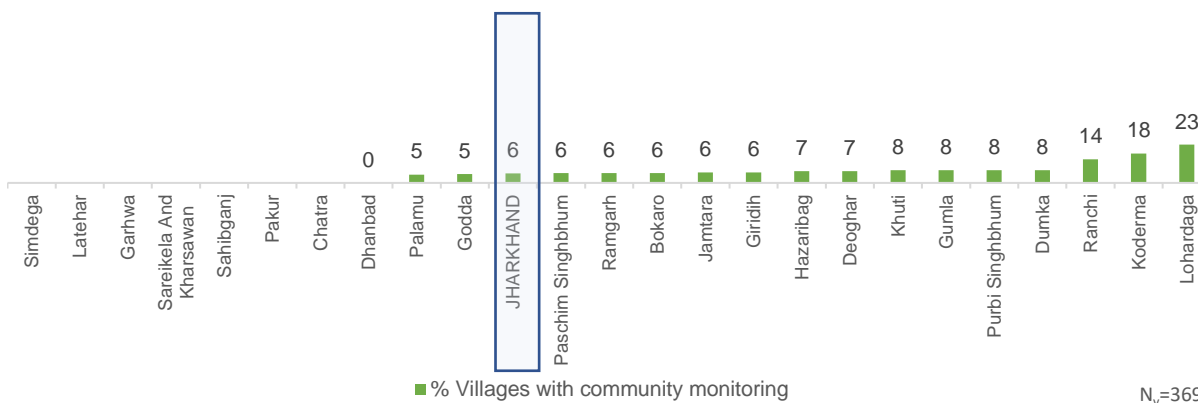


Across the state, villages reported 'PHED' the most for being responsible for all essential aspects about operation and maintenance of PWS schemes.

E. Villages with community level monitoring of water wastage

6% of villages in the state reported to have community level monitoring of water wastage.

Figure 51: Villages reported having community level monitoring of water wastage

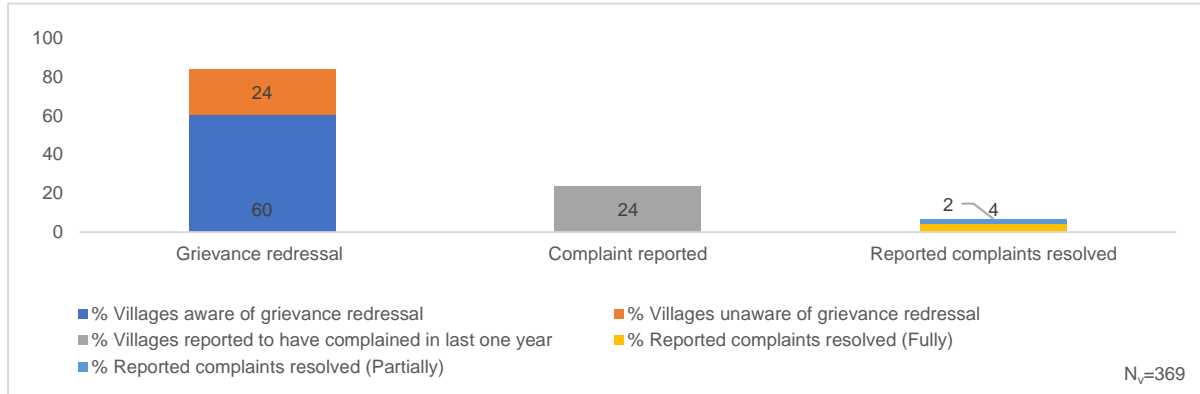


3.9. Status of service delivery related grievances and redressal

A. Village level

Grievance redressal at village

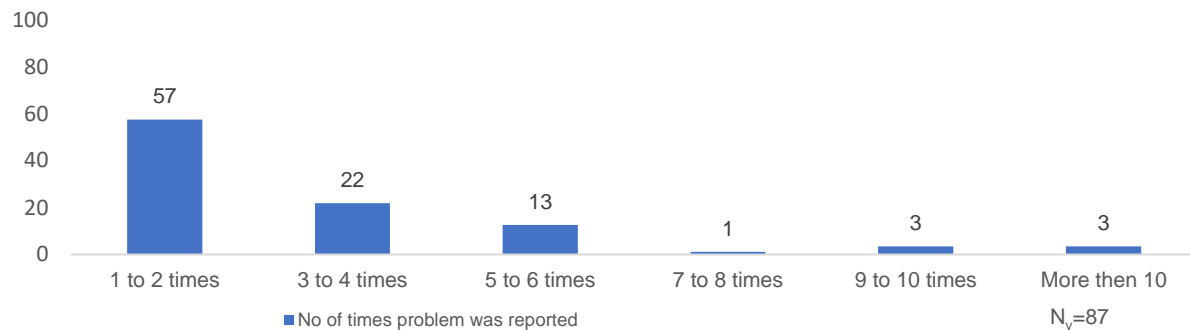
Figure 52: Reporting of grievance redressal at village level



In the state, **60% of villages** reported that they are aware of any grievance redressal mechanism, but only 24% HHs have reported a complaint in the last one year amongst which 4% reported that the complaints are fully resolved while 2% of complaints have been partially resolved.

Problem reported in last 1 year

Figure 53: Number of times villages have reported grievance in last 1 year

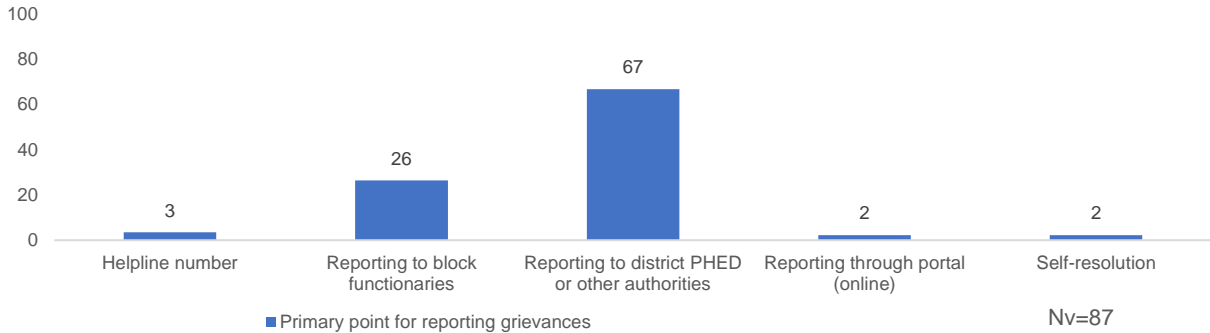


Among the villages who reported a complaint (i.e., 87 villages), 57% villages have reported a complaint once or twice times in the last one year, while 22% reported a complaint at least three or four.

Primary points for reporting grievances and key problems

Among those who reported complaint (i.e., 24% HHs, 87 villages), **67% of villages** reported that they report their grievances to **district PHED** beside other reporting-points.

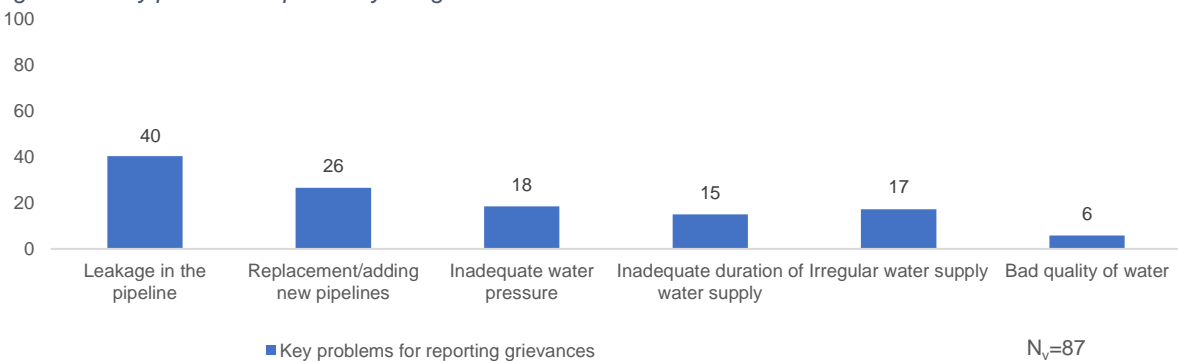
Figure 54: Primary points for reporting grievances by village



Key problems for reporting grievances

Overall, among those who reported complaint (i.e., 24% HHs, 87 villages) **40% of villages** reported that **leakage in the pipeline** is their most encountered problem for reporting grievances.

Figure 55: Key problems reported by village

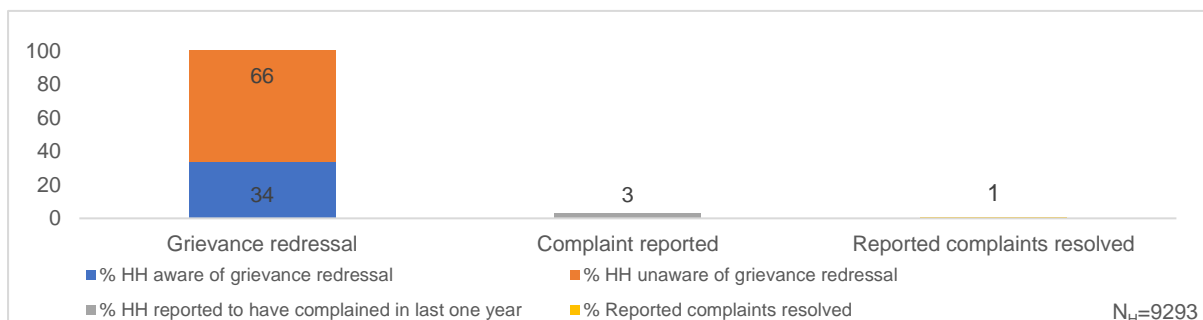


B. Household level

Awareness of grievance redressal at household

In the state, **34% of HHs** reported that they are aware of any grievance redressal mechanism w.r.t. HH tap water through PWS, but only 3% HHs have reported a complaint in the last one year and only 1% of complaints have been resolved.

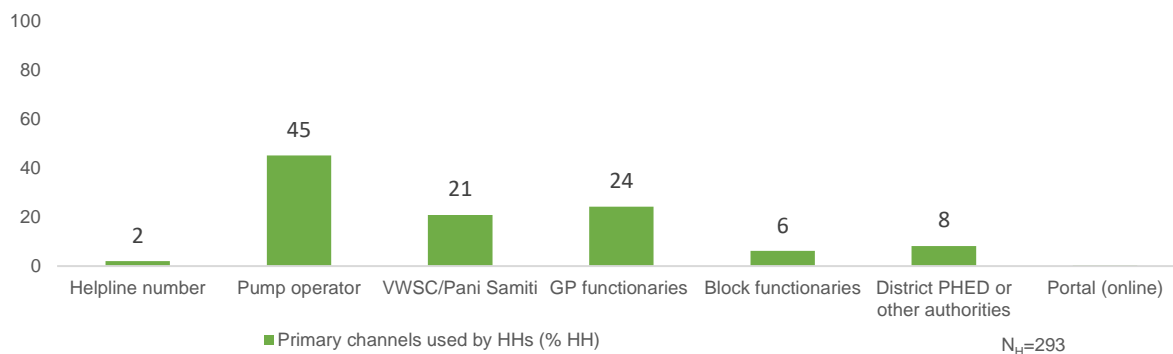
Figure 56: Reporting of grievance redressal at household level



Primary channels for reporting grievances by households

Among those who reported complaint as shown in the above graph (i.e., 3% HHs, 293 HHs), **45%** of the HHs reported their complaints to the **pump operators** beside other reporting-channels

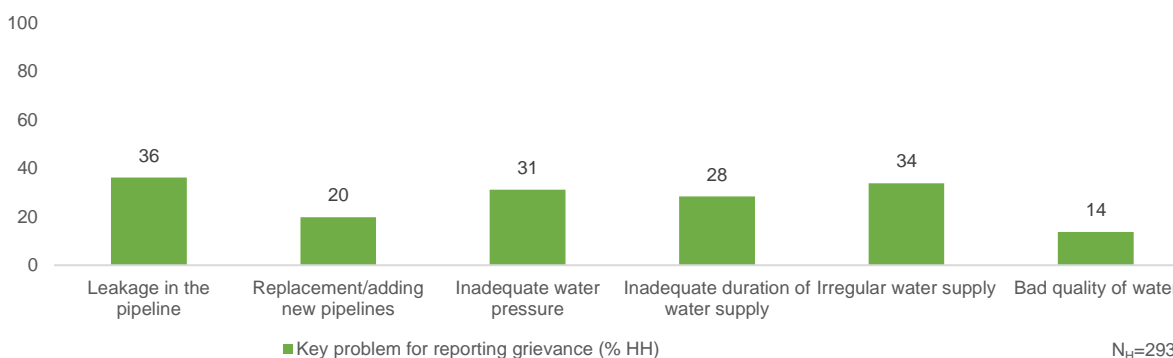
Figure 57: Primary channels for reporting grievances by households



Key problems for reporting grievances

Overall, among those who reported complaint (i.e., 3% HHs, 293 HHs) **36%** of the HHs that reported problems was of **leakage in the pipeline** beside other problems

Figure 58: Key problems reported by households

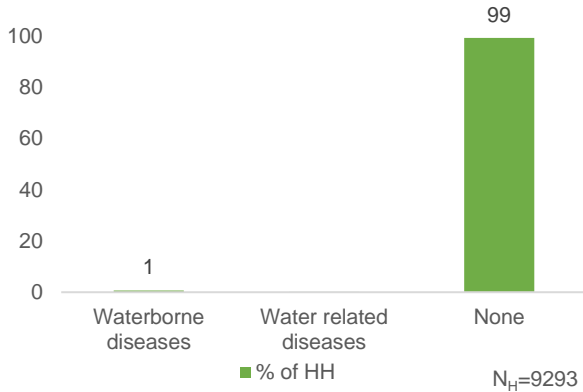


3.10. Perception of HHs on Outcome Indicators

A. Incidence of water borne diseases at HH level in last one year

Across the state only 1% HHs reported having an incidence(s) of water borne diseases in your household in last one year. The cases recorded were of Dysentery, Diarrhoea, Cholera and Typhoid

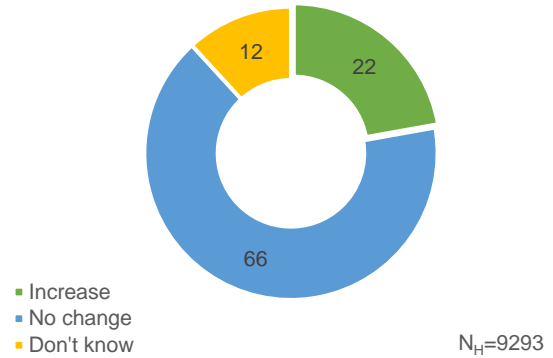
Figure 59: Household reported incidence of water borne diseases in last one year



B. Change in employment days since FHTC programmes/schemes

Since having a functional HH tap connection, 22% HHs across the state has reported that there has been a change in the no. of employment days of the adult HH members while 66% HHs reported no change

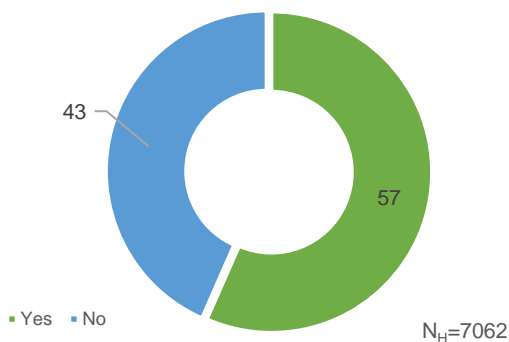
Figure 60: Household reported a change in employment days since FHTC programmes /schemes



C. Reduction in time and effort in collecting water

Out of the HHs reported (i.e. 7062) that female members used to fetch water before HH tap connection, 57% reported that post installation of HH tap connection it helped reduction of time and effort in collection of water

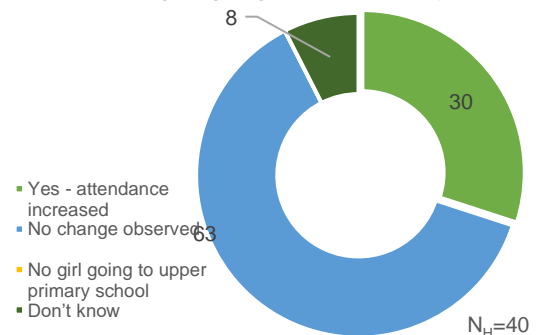
Figure 61: Households reported reduction in time and effort in collecting water



D. Impact on attendance of the girls going to upper primary

Across the state, 30% HHs reported that since having a functional HH tap connection the attendance of the girls going to schools increased, while 63% HHs reported no change in attendance which could possibly be an impact of shutting down of schools due to COVID-19 related lockdown during the survey

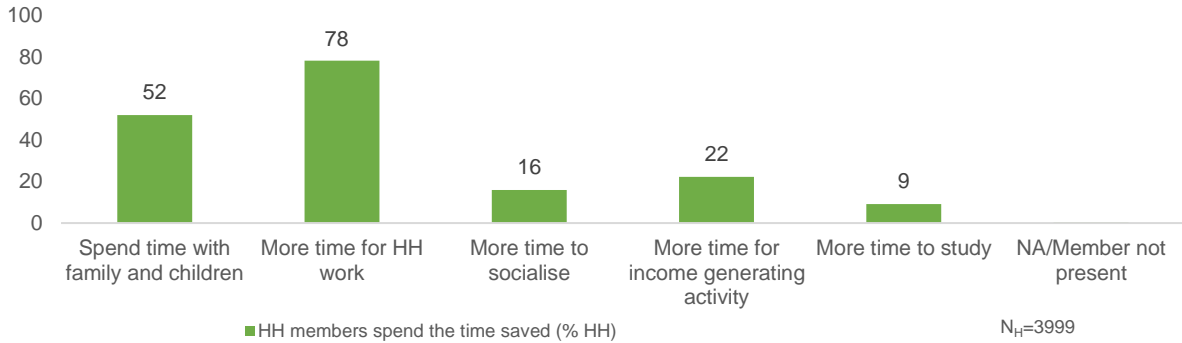
Figure 62: Households reported increase of attendance of girls going to upper primary school



E. HHs are using time saved due to provision of tap connection

Time saved by female HH members against collecting water, post installation of HH tap connections, was reportedly most utilized for other HH work (78%).

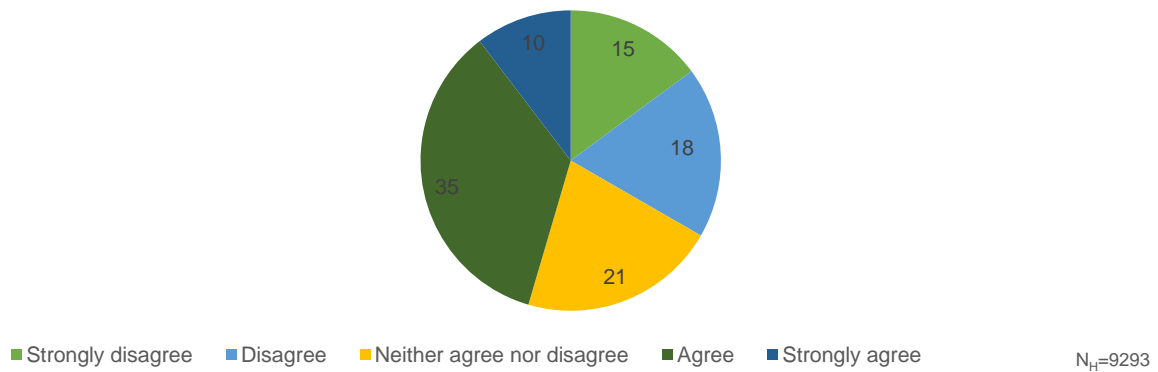
Figure 63: Utilization of time saved by households post installation of HH tap connection



F. Change in social status

Sense of pride and positive change in social status was reportedly realized by 45% of HHs post the installation of HH tap connections.

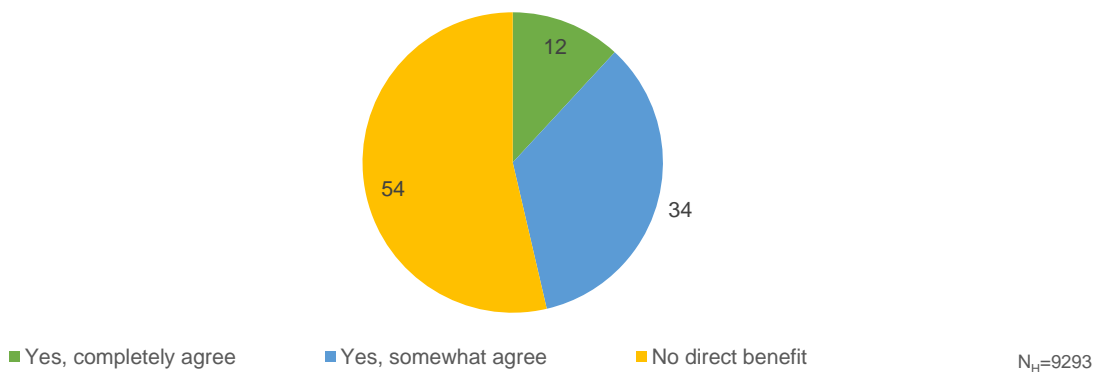
Figure 64: Households reported to have a positive change in social status








G. Direct benefits in terms of income due to FHTC

Across the state, 12% of sampled HHs reported being in complete agreement that there had been direct benefits on their HH income since the installation of HH tap connection, while 34% HHs reported being in partial agreement against the same.

Figure 65: Households reported to have received direct benefits in terms of income due to FHTC



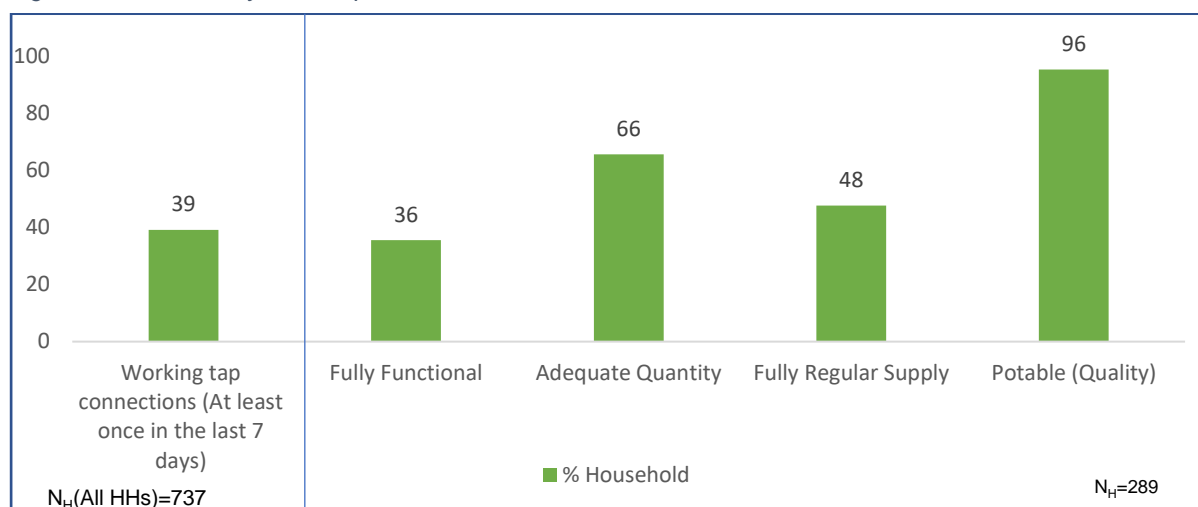
3.11. User satisfaction

Table No. 7: User satisfaction - more than 75% happy with FHTC services			
S. No.	Parameter (N _h =9293)		In %
1	Regularity		62.8
2	Overall quality		64.7
3	Colour		67.0
4	Taste		67.0
5	Odour		67.8

4. Functionality status of FHTC at household level for Har Ghar Jal districts

4.1 Overall Functionality (in %)

Figure 66: Functionality of HH tap connection for Har Ghar Jal districts



* Fully Functional has been computed as = Adequate Quantity \cap Fully Regular Supply \cap Potable (Quality)

Please note: For HGJ district, N_H=289 implies all HHs where water was found on the day of the survey.

It has been found that 39 percent of the sampled HHs (N=737) had working tap connections. 36 percent HHs in the state were found to have fully functional HH tap water connection. Moreover, more than 3 out of 5 households (66 percent) received adequate quantity (\geq 55 LPCD) of water supply and less than half received regular supply (48 percent) of water. The on-site testing and lab test results of the water indicates that more than 9 out of 10 (96%) sampled households in the state receive potable water.

S. No.	District	Working tap connections (HHs which received water through FHTC at least once in the last 7 days) (% HH)	Fully functional (% HH)	Adequate Quantity (% HH)	Full Regular Supply (% HH)	Potable (Quality) (% HH)
1.	Palamu	100	0	53	35	100
2.	Sareikela And Kharsawan	100	57	95	57	100
3.	Khuti	95	27	60	34	96
4.	Purbi Singhbhum	94	82	100	82	100
5.	Ramgarh	63	0	17	4	100
6.	Ranchi	50	50	89	50	100
7.	Deoghar	39	27	60	34	96
8.	JHARKHAND	39	36	53	35	100
9.	Paschim Singhbhum	37	20	60	57	100
10.	Dhanbad	31	50	89	50	100
11.	Godda	13	9	73	45	55
12.	Giridih	9	36	66	48	96
13.	Dumka	0	71	100	100	71
14.	Jamtara	0	82	82	91	94

S. No.	District	Working tap connections (HHs which received water through FHTC at least once in the last 7 days) (% HH)	Fully functional (% HH)	Adequate Quantity (% HH)	Full Regular Supply (% HH)	Potable (Quality) (% HH)
15.	Chatra	0	0	14	14	100

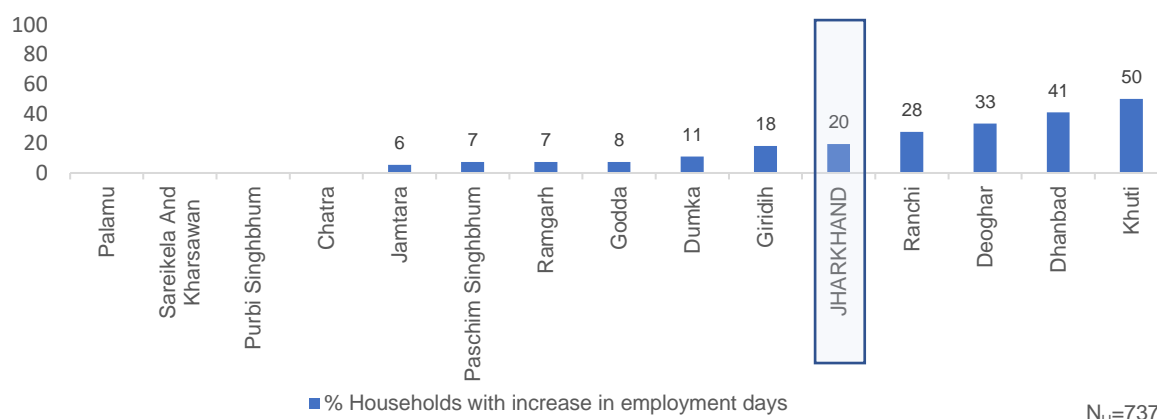
Potable water has been considered basis testing of water samples through laboratory tests for physical, chemical, and bacteriological as given in Table 5 parameters (within acceptable/ permissible range) and onsite testing of pH. The details of laboratory test are mentioned in the table given above in the glossary.

4.2 Perception of HHs from Har-Ghar-Jal villages on Outcome Indicators

A. Change in employment days since FHTC programmes/ schemes

Across the state, one-fifth of the sampled households reported that employment days increased since the installation of FHTC.

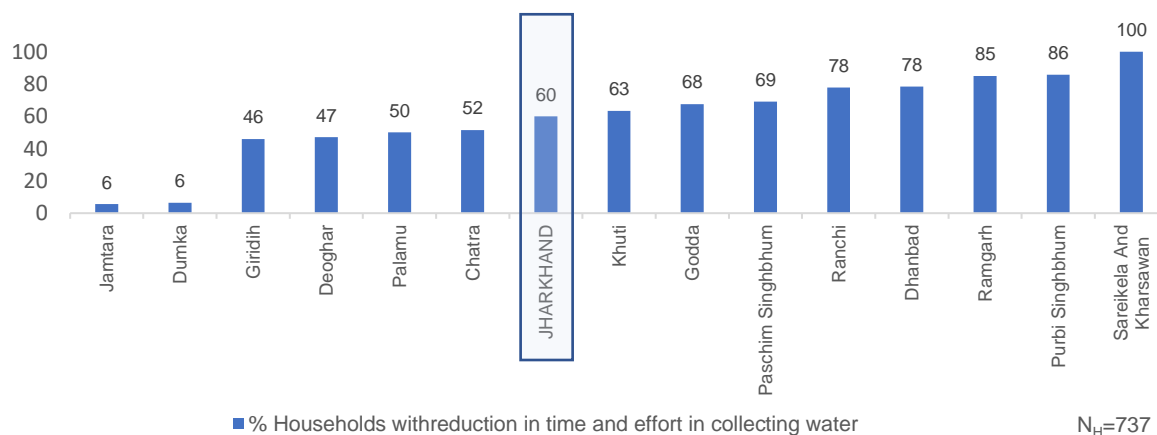
Figure 67: Household reported a change in employment days since FHTC programmes /schemes in Har Ghar Jal districts



B. Reduction in time and effort in collecting water

Similarly, about 60% of the sampled households also reported that the effort and time in collecting water reduced after installation of FHTC.

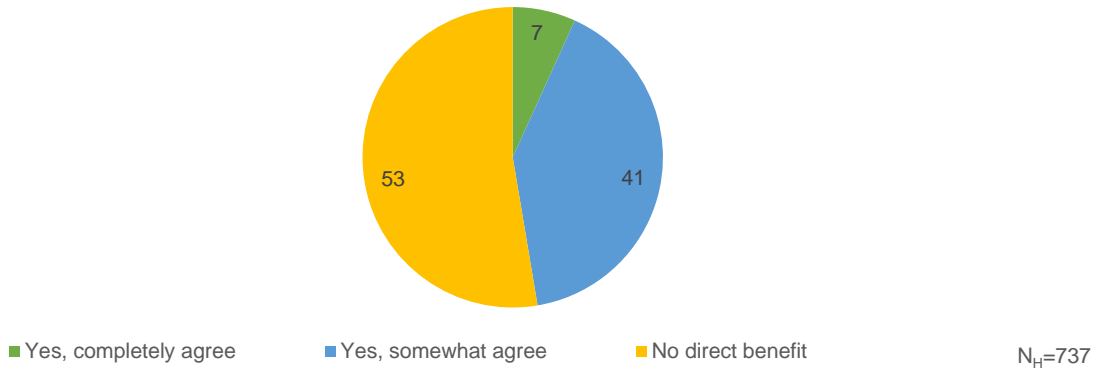
Figure 68: Households reported reduction in time and effort in collecting water in Har Ghar Jal districts



4.3 Direct benefits in terms of income due to FHTC

Across the nation, 7% of sampled HHs from HGJ villages reported being in complete agreement that there had been direct benefits on their HH income since the installation of HH tap connection, while 41% reported being in partial agreement against the same.

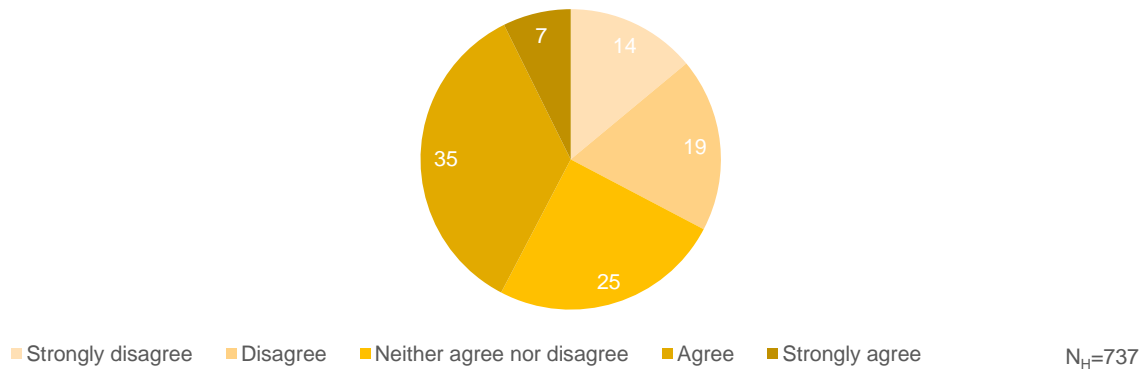
Figure 69: Households reported to have received direct benefits in terms of income due to FHTC in Har Ghar Jal districts



4.4 Change in social status

42% of the households felt HH tap connection earned them more respect, feeling of pride and brought a positive change in their social status.

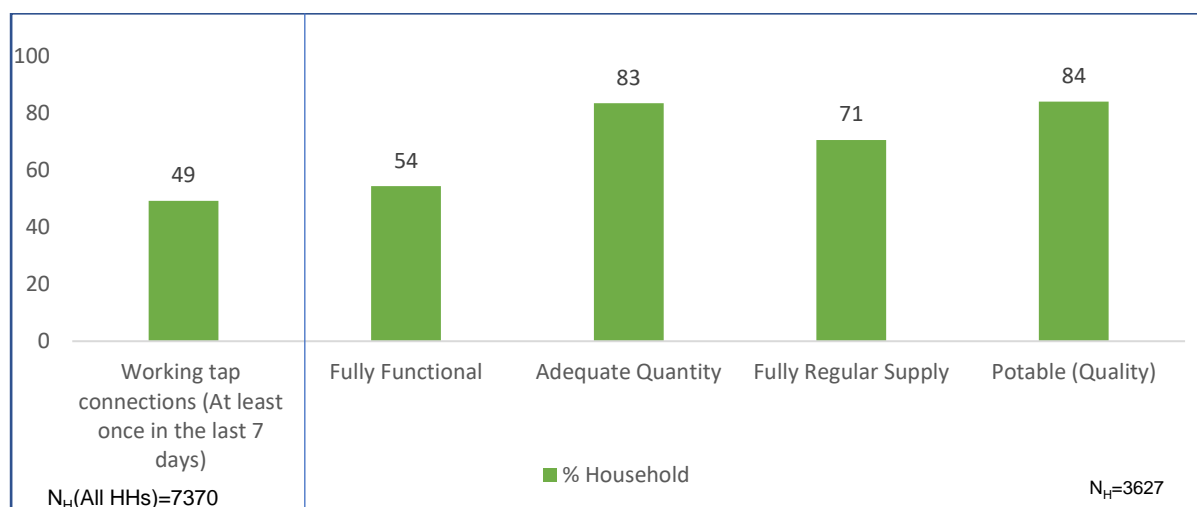
Figure 70: Households reported to have a positive change in social status in Har Ghar Jal districts



5. Functionality status of FHTC at household level for aspirational districts

5.1 Overall Functionality (in %)

Figure 71: Functionality of HH tap connection for aspirational districts



* Fully Functional has been computed as = Adequate Quantity \cap Fully Regular Supply \cap Potable (Quality)

Please note: For aspirational district, N_H=3627 implies all HHs where water was found on the day of the survey.

It has been found that 49 percent of the sampled HHs (N=7370) had working tap connections. 54 percent HHs in the state were found to have fully functional HH tap water connection. Moreover, more than 4 out of 5 households (83 percent) received adequate quantity (\geq 55 LPCD) of water supply and more than 2 out of 3 received regular supply (71 percent) of water. The on-site testing and lab test results of the water indicates that more than 8 out of 10 (84%) sampled households in the state receive potable water.

S. No.	District	Working tap connections (HHs which received water through FHTC at least once in the last 7 days) (% HH)	Fully functional (% HH)	Adequate Quantity (% HH)	Full Regular Supply (% HH)	Potable (Quality) (% HH)
1.	Latehar	94	70	99	87	83
2.	Lohardaga	87	50	94	75	71
3.	Purbi Singhbhum	80	84	100	87	96
4.	Ranchi	70	25	84	37	80
5.	Khuti	64	24	73	33	81
6.	Palamu	57	42	56	64	98
7.	Simdega	53	43	91	77	55
8.	Garhwa	51	90	100	91	98
9.	Dumka	51	84	95	93	93
10.	Ramgarh	51	59	77	67	90
11.	Paschim Singhbhum	50	53	90	80	78
12.	JHARKHAND	49	54	83	71	84
13.	Bokaro	46	49	76	61	95
14.	Hazaribag	42	55	82	66	89
15.	Gumla	41	47	89	79	56

S. No.	District	Working tap connections (HHs which received water through FHTC at least once in the last 7 days) (% HH)	Fully functional (% HH)	Adequate Quantity (% HH)	Full Regular Supply (% HH)	Potable (Quality) (% HH)
16.	Sahibganj	37	56	60	78	99
17.	Pakur	24	60	63	66	100
18.	Giridih	17	17	50	62	49
19.	Godda	14	15	18	53	95
20.	Chatra	9	41	79	47	100

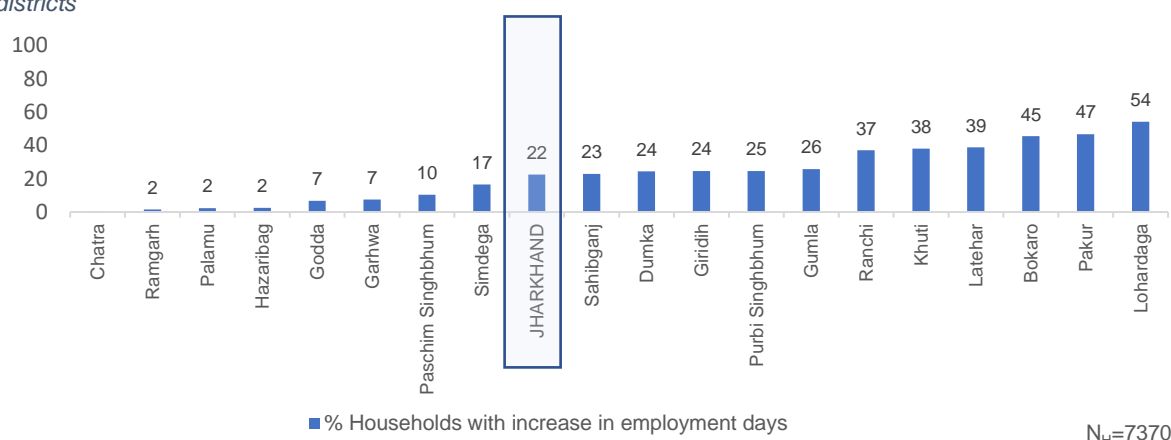
Potable water has been considered basis testing of water samples through laboratory tests for physical, chemical, and bacteriological as given in Table 5 parameters (within acceptable/ permissible range) and onsite testing of pH. The details of laboratory test are mentioned in the table given above in the glossary.

5.2 Perception of HHs from aspirational districts on Outcome Indicators

A. Change in employment days since FHTC programmes/ schemes

Only around 22 percent of the households in aspirational districts reported increase in employment days since installation of FHTC.

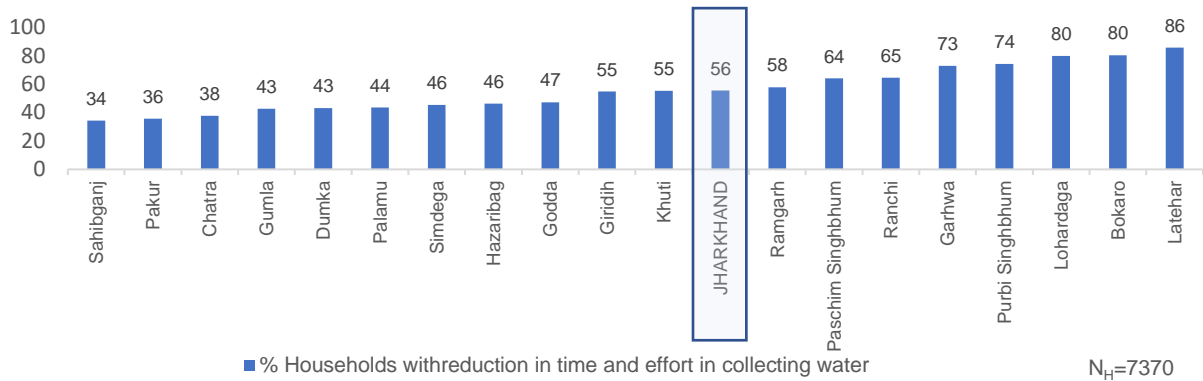
Figure 72: Household reported a change in employment days since FHTC programmes /schemes in Aspirational districts



B. Reduction in time and effort in collecting water

Only around 56 percent of the households in aspirational districts reported reduction in time and effort in collecting water.

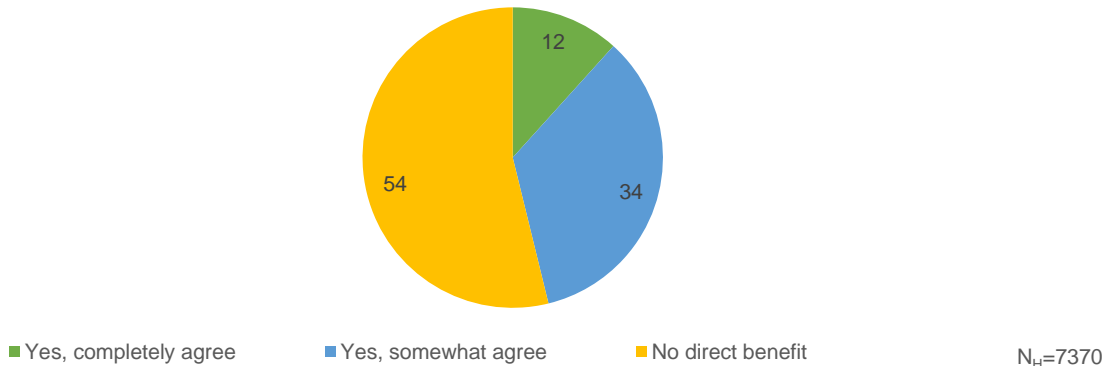
Figure 73: Households reported reduction in time and effort in collecting water in Aspirational districts



5.3 Direct benefits in terms of income due to FHTC

Across the state, 12% of sampled HHs from aspirational districts reported being in complete agreement that there had been direct benefits on their HH income since the installation of HH tap connection, while 34% reported being in partial agreement against the same.

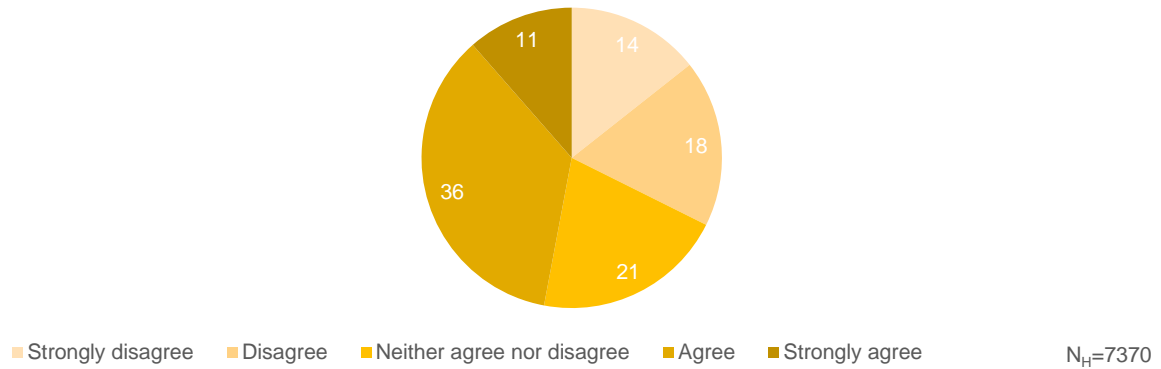
Figure 74: Households reported to have received direct benefits in terms of income due to FHTC in Aspirational districts



5.4 Change in social status

Less than half of the households in aspirational districts felt HH tap connection earned them more respect, feeling of pride and brought a positive change in their social status.

Figure 75: Households reported to have a positive change in social status in Aspirational districts



6. Annexure

Table No. 10: List of replaced villages				
S. No.	District Name	Village Name	Status of the Scheme (No Scheme/Replaced & Defunct)	Remarks
1	Ranchi	Dahisot	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Naro. Scheme found to be functional in replacement village
2	Ranchi	Siri	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Khijri. Scheme found to be functional in replacement village
3	Ranchi	Bargari	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Jaher. Scheme found to be defunct in replacement village
4	Gumla	Murgu	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Chegri. Scheme found to be defunct in replacement village
5	Palamu	Tunudag	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Kanke Kalan. Scheme found to be functional in replacement village
6	Palamu	Semri	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Amwa. Scheme found to be defunct in replacement village
7	Palamu	Dema	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Bhagat Tendua. Scheme found to be functional in replacement village
8	Palamu	Kutmu	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Manika. Scheme found to be functional in replacement village
9	Latehar	Barwaia Kalan	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Sinjo. Scheme found to be functional in replacement village
10	Latehar	Jarhatoli	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Namudag. Scheme found to be functional in replacement village
11	Latehar	Chatakpur	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Ghutua. Scheme found to be functional in replacement village
12	Latehar	Merhari	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Patna. Scheme found to be functional in replacement village
13	Latehar	Parhi	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Shishi. Scheme found to be functional in replacement village
14	Garhwa	Hur	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Pratappur. Scheme found to be defunct in replacement village
15	Garhwa	Chak Chhapardaga	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Chhapardaga. Scheme found to be functional in replacement village
16	Garhwa	Chandni	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Kitasoti Kalan. Scheme found to be functional in replacement village
17	Garhwa	Siho	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Loka. Scheme found to be functional in replacement village
18	Paschim Singhbhum	Jhargaon	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Ban Dih. Scheme found to be defunct in replacement village

Table No. 10: List of replaced villages				
S. No.	District Name	Village Name	Status of the Scheme (No Scheme/Replaced & Defunct)	Remarks
19	Sareikela And Kharsawan	Otodib	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Murumdih. Scheme found to be functional in replacement village
20	Purbi Singhbhum	Latia	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Patnipal. Scheme found to be functional in replacement village
21	Godda	Nimania Kita	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Mahadew Kita. Scheme found to be defunct in replacement village
22	Godda	Gorakhpur	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Lalmatia. Scheme found to be functional in replacement village
23	Godda	Liti	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Chauchak. Scheme found to be defunct in replacement village
24	Godda	Pokhariya	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Ranidih. Scheme found to be defunct in replacement village
25	Godda	Pindari	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Sondiha. Scheme found to be defunct in replacement village
26	Godda	Liladah	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Amwar (Santali). Scheme found to be functional in replacement village
27	Godda	Korkaghat	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Chilra. Scheme found to be defunct in replacement village
28	Godda	Kanhwara	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Gobindpur. Scheme found to be defunct in replacement village
29	Ramgarh	Tapin	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Laiyo South. Scheme found to be defunct in replacement village
30	Chatra	Sikid	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Ara. Scheme found to be defunct in replacement village
31	Chatra	Narchahi	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Amjhar. Scheme found to be defunct in replacement village
32	Giridih	Khijarsota	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Ukarsal. Scheme found to be functional in replacement village
33	Giridih	Bela Tand	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Asan Singha. Scheme found to be functional in replacement village
34	Giridih	Baso Kando	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Bermuaka. Scheme found to be functional in replacement village
35	Bokaro	Dharwa Tand	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Khetko. Scheme found to be functional in replacement village
36	Dhanbad	Diwali	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Govind Pur. Scheme found to be functional in replacement village
37	Dhanbad	Kusum Daha	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Sindurpur. Scheme found to be defunct in replacement village

Table No. 10: List of replaced villages				
S. No.	District Name	Village Name	Status of the Scheme (No Scheme/Replaced & Defunct)	Remarks
38	Dhanbad	Bastikulhi	No Scheme / Defunct Scheme	No Scheme present in the sampled village, hence replaced with Village- Kokrad. Scheme found to be defunct in replacement village
39	Deoghar	Pokhariya	No Scheme	No Scheme present in the sampled village, hence replaced with Village- Purbahi Kothiya. Scheme found to be functional in replacement village