

Assessment of functionality status of household tap connections in rural areas (2020-21)

State report

Manipur



Submitted to:
National Jal Jeevan Mission
Department of Drinking Water and Sanitation
Ministry of Jal Shakti

Report prepared by:
NIELSEN (INDIA) PRIVATE LIMITED

Table of Contents

1. Introduction	2
2. Objectives of the study	2
3. Approach and Methodology	2
4. Key Findings	3
5. Conclusions	8
Annexure 1: List of village with no scheme/defunct schemes/under construction	9
Annexure 2: List of villages with schemes supplying only through tap stand/stand posts	11
Annexure 3: List of villages where 15 FHTCs were not found	13
Annexure 4: Indicative proportion of functional tap connections by districts	13
Annexure 5: List of villages where samples failed for given quality parameter	14

1. Introduction

Announced in 2019, the Jal Jeevan Mission – Har Ghar Jal (JJM – HGJ) is implemented by Department of Drinking Water and Sanitation (DDWS), Ministry of Jal Shakti in partnership with States/ UTs. JJM aims to provide a Functional Household Tap Connection (FHTC) to every rural home in the country by 2024. A household tap connection is said to be functional when the tap water supply is of adequate quantity (minimum 55 lpcd) and prescribed quality (as per BIS:10500) on regular and long-term basis. Further, JJM seeks to promote holistic management of local water sources and not just provide tap water connections.

The DDWS had engaged Nielsen (India) Private Limited to undertake 'Functionality Assessment' of household tap connections. The assessment covered household tap connections in 6,992 villages across 704 districts from 31 States/ UTs. The survey was undertaken in November – December 2020.

2. Objectives of the study

The main objectives were an assessment of Functionality of Household Tap Connections (FHTCs) under JJM on various parameters; ascertaining, in the form of data, on-ground progress of JJM in terms of adequate quantity of prescribed quality of drinking water supplied to rural households on regular basis; and engaging with Gram Panchayats and/ or its sub-committees of the sample villages and soliciting their feedbacks and recommendations for improving the programme implementation; and to suggest measures for mid-course correction for improvement in functionality of household tap connections.

3. Approach and Methodology

The approach followed was to assess the functionality of household tap connections (within premises) and in-village drinking water supply infrastructure. The selection of sample villages was from the JJM-Integrated Management Information System (IMIS) data-base of villages having at least 15 household tap connections. In each sample village, the largest PWS scheme was sampled. The survey was planned as in-person Computer Aided Personal Interview (CAPI) survey, and included an on-ground assessment of the functionality of sample PWS schemes and tap connections attached to the same. The survey included measurement of the quantity of water received at the household level through the tap connection, as well as water testing to check whether the quality of the drinking water is as per the BIS standards, using Field Test Kits (FTKs) and H₂S vials. The study also collected supply side information, including assessment of the quantity of water supplied by the scheme, operation and maintenance arrangements, availability and functionality of scheme level infrastructure and the aspects related to source and system sustainability.

A sample of 10 villages from every district in the State were selected following probability proportionate to size (PPS) systematic random sampling method ensuring due representation of SC/ SC majority villages as well as quality-affected villages. In each selected village, households for the survey were selected at head end, middle and tail end of the selected piped water supply network. In Manipur the survey was conducted in 1525 households from 152 villages in 16 districts.

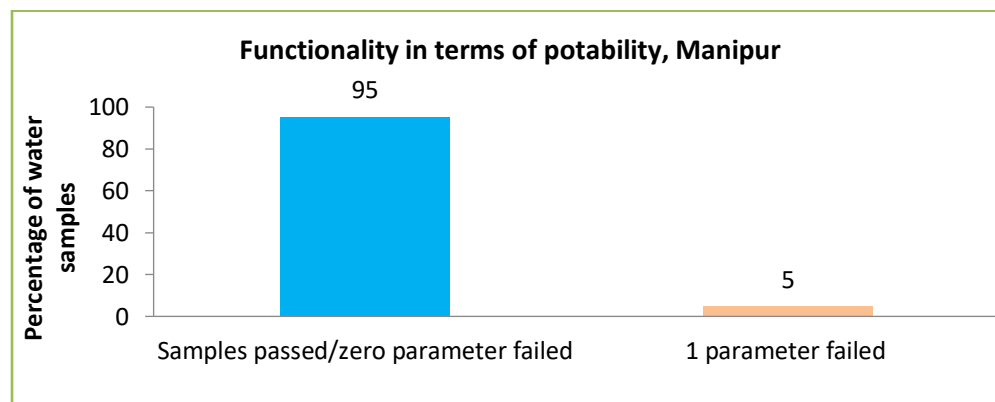
4. Key Findings

SL.	INDICATOR	Manipur	India
Household level			
1	Average household size	5.9	5.6
2	Percent of households using FHTC for drinking purpose	97.5	88.9
3	Percentage of households reported working tap connections (supply at least one day in last 7 days)	95.5	93.6
4	Number of water supply days in a usual week		
4a	1 – 2 days	20.9	7.6
4b	3 – 4 days	21.6	10.4
4c	5 – 6 days	0.7	1.5
4d	7 days	56.8	80.5
5	Number of water supply days in the last week		
5a	0 days	1.8	2.4
5b	1 – 2 days	22.2	9.7
5c	3 – 4 days	23.1	14.8
5d	5 – 6 days	1.7	4.9
5e	7 days	51.1	68.1
6	Percentage of households reporting reliability of water supply days	81.0	86.5
7	Percentage of households reporting tap connections functioning continuously for more than 15 days in a month for last 12 months	81.0	84.6
8	Average number of times water is supplied on the days of supply		
8a	1 time	67.1	56.6
8b	2 times	15.7	28.2
8c	3 times	0.0	6.1
8d	4 times/24 hours	17.1	9.1
9	Percentage of households reporting reliability of supply for different supply timings	75.2	84.3
10	Percentage of households reporting adequate water pressure for different supply timings		
10a	Morning	73.6	80.1
10b	Afternoon	85.2	84.6
10c	Evening	0.0	84.8
11	Percentage of households reported paying water tariff – separately or along with other taxes	53.6	52.8
12	Percentage of households reported receiving 55 lpcd or more	76.7	83.5
13	Percentage of households having potable water *	95.3	61.3
14	Percentage of households reporting regularity of supply	92.4	87.2
15	Percentage of households reporting functional tap connections	68.6	47.8
Village level			
16	Percentage villages having functional water and sanitation committees	96.7	48.5
17	Percentage of functional schemes in the sample villages considering all schemes (supplying water any day in the last 7 days)	88.8	86.0
18	Percentage of in-village schemes having O&M undertaken by village water	95.9	83.1

SL.	INDICATOR	Manipur	India
	and sanitation committee or by Panchayat		
19	Percentage of sample schemes reported having faced challenges in the last one year		
19a	Inadequate infrastructure	67.5	40.2
19b	Poor water availability at the source	51.3	33.0
19c	Poor maintenance	65.0	46.2
19d	Natural calamity	78.6	63.4
20	Percentage of schemes reporting measure to improve source sustainability	65.6	59.9
21	Number of sample villages found with no scheme (defunct/under construction/not handed over/not constructed)	22	751

Figures 1, 2 and 3 depicts the functionality aspects of the household tap connections in Manipur. Figure 1 presents the details of the potability aspects – the proportion of samples which have qualified as per all 13-15 parameters, as well as the proportion of sample which have failed due to one/two/three/more than three parameters.

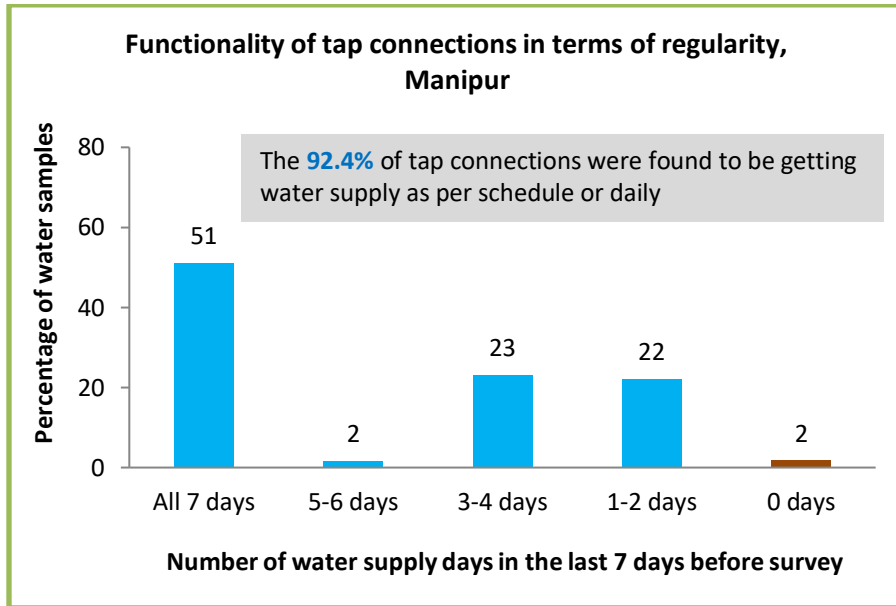
Fig 1: Functionality of the household tap connection in terms of potability - Manipur



Base: Households with water quality testing done, N: 128

Figure 2 presents functionality in terms of regularity, and presents the water supply situation in the last 7 days (before survey date). This includes information on the proportion of taps supplying water on all 7 days, 5-6 days, 3-4 days, 1-2 days and zero days in the last 7 days. As not all schemes are planned to supply water daily, the information of the proportion of taps supplying water daily or as per the water supply schedule is also presented.

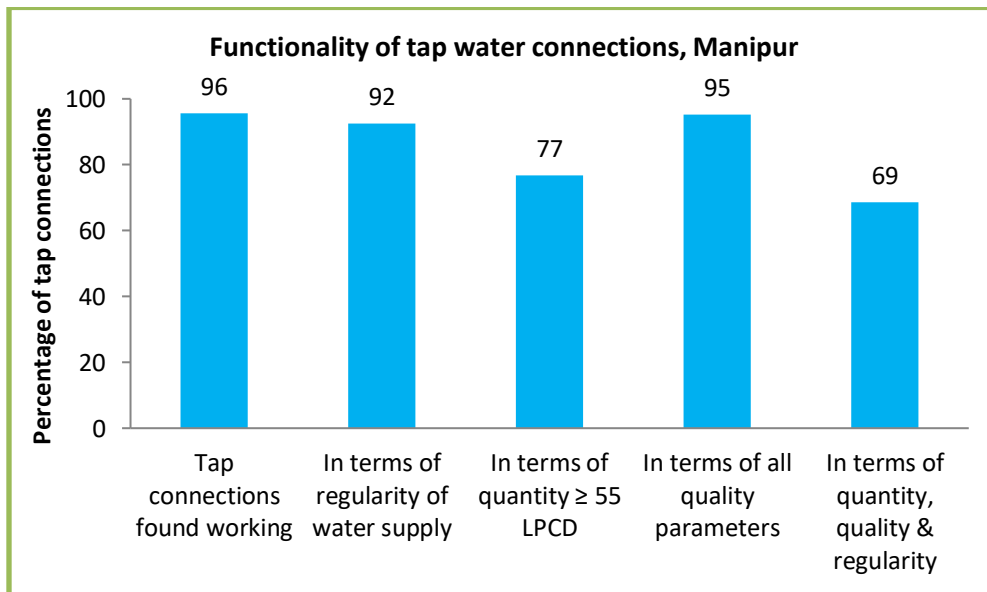
Fig 2: Functionality of the household tap connection in terms of regularity - Manipur



Base: All Households, N: 1525

Figure 3, presents the summary situation of the working tap connections (defined as supplying water atleast on one day in the last 7 days), the functionality in terms of the proportion of tap connections which have qualified regularity, quantity, quality parameters, and the proportion which have qualified all 3 parameters.

Fig 3: Overall functionality of the household tap connection - Manipur

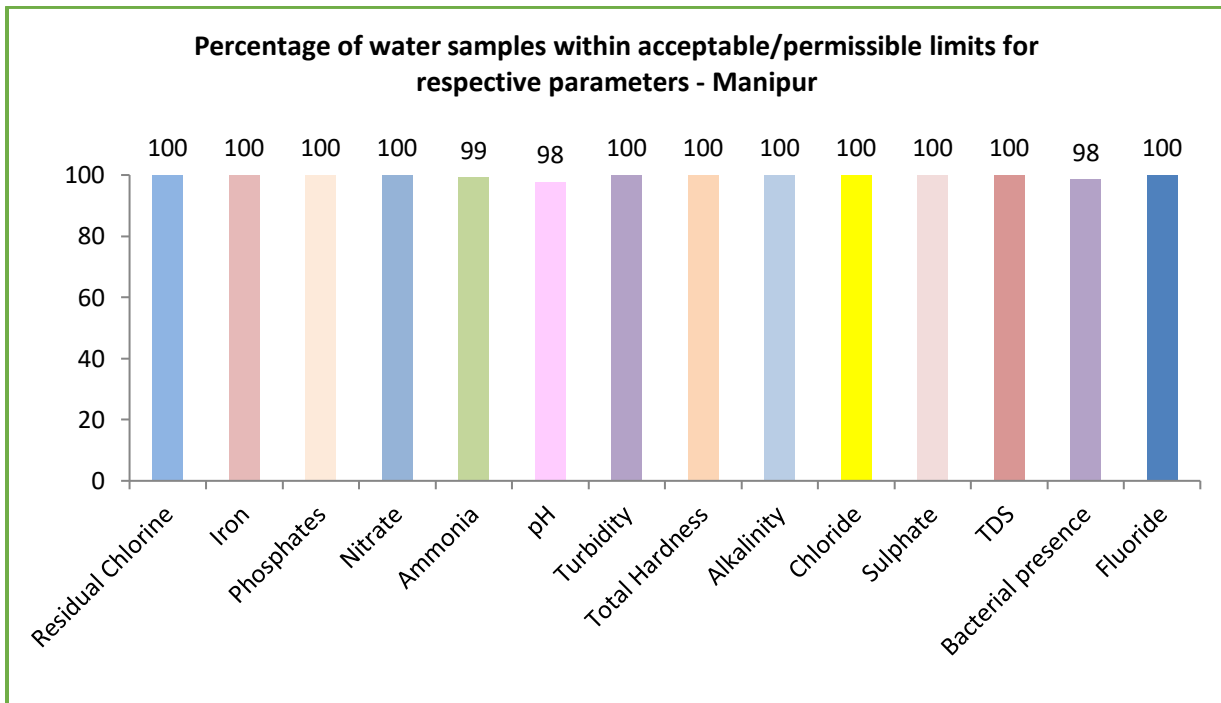


Base: Total count of tap connections considered for functionality assessment, N: 1482

A total of 128 water samples were tested as per BIS: 10,500 standards for all 13 parameters. The figure below shows the proportion of samples in which different parameters were found within acceptable/permissible limits.

As can be seen, almost all the samples Residual Chlorine, Iron, Phosphates, Nitrate, Ammonia, pH, Turbidity, Total Hardness, Alkalinity, Chloride, Sulphate, TDS, Bacterial presence (total coliform) and Fluoride within acceptable/ permissible limits.

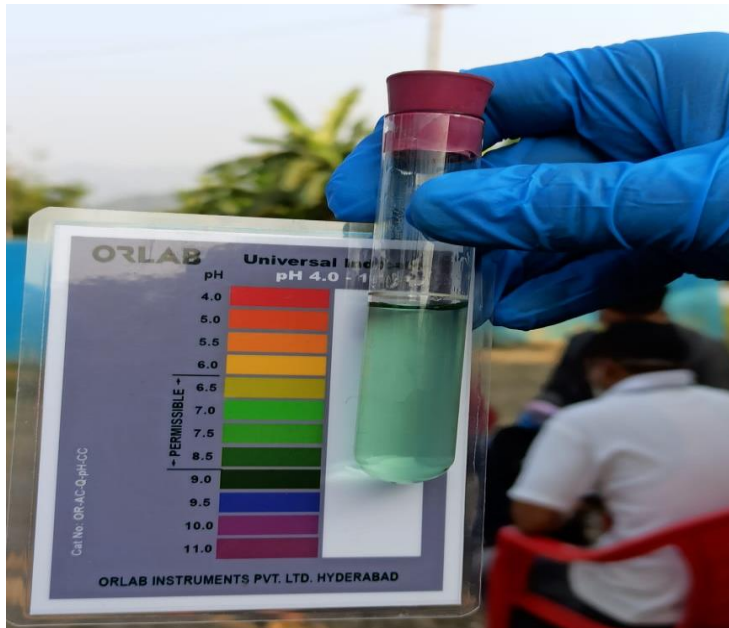
Fig 4: Percentage of water samples within acceptable/permissible limits for respective parameters - Manipur



Pic 1: Household survey being undertaken in one of the villages in Manipur



Pic 2: Water quality sample testing being undertaken in a village in Manipur



5. Conclusions

Manipur has performed well in the functionality assessment with 2 out of every 3 households with tap connections have been assessed to have a functional tap connection. Almost all households have reported regular water supply and potable water supply. However, only 77 percent reported being supplied with 55 lpcd or more of water. Manipur had higher proportion of functional tap connections (68.6%) as compared with the national average. Since the tap connections considered to be functional were as per the JJM guidelines of including adequate quantity (55 lpcd or more), potability (as per BIS:10500 standards) and regularity of water supply (all days or as per the water supply schedule), the reason that a higher proportion of households had functional tap connections is mostly due to the higher proportion of households having a combination of potability and regularity (73 percent households having adequate quantity and potable water; 87 percent households having potable water received on a regular basis; while 72 percent households had adequate quantity of water supply on a regular basis).

The proportion of households reporting currently working tap connections in Manipur is high (96%). On a usual basis, almost 57 percent of the households have reported receiving water supply on a daily basis. Two thirds of the households have reported being supplied water once a day, and another 17 percent of the households reported receiving more than four times or 24 hours supply. A majority of the households have reported a reliability of water supply timings as well as adequate water pressure.

However, despite good quality water supply service delivery, the fact only half of the households have reported paying water tariff is an area to be addressed. As per the JJM guidelines, the State Government needs to ensure 100% fund requirement for operation and maintenance of the schemes are met by the Agency responsible for water supply provision to function as a utility.

Almost all of the villages have reported having water and sanitation committees that too functional as almost all these committees were actually taking responsibility for operation and maintenance activities of the PWS schemes. As reported by the communities 'poor water availability', 'natural calamities', 'poor maintenance' and inadequate infrastructure' were the challenges faced by majority of the schemes. Two-third of the schemes had taken any initiatives for source sustainability.

Annexures to this report includeas:

- List of village with no scheme/defunct schemes/under construction is placed as Annexure 1,
- List of villages with schemes supplying only through tap stand/stand posts is placed as Annexure 2,
- List of villages where 15 FHTCs were not found is placed as Annexure 3,
- Indicative proportion of functional tap connections by districts is placed as Annexure 4, and
- List of villages where samples failed for given quality parameter is placed as Annexure 5

Functionality Assessment Survey 2020-21- Manipur

Annexure 1: List of village with no scheme/defunct schemes/under construction

S.No.	District Name	Block Name	Panchayat Name	Village Name	Name of largest scheme in the village	Type	Status of the scheme	Remarks
1.	Imphal East	Keirao Bitra	Keirao Makting	Keirao Makting	Langdum W/S scheme	MVS	Under construction	Under construction
2.	Jiribam	Jiribam	Borobekra	Chotobekra	RWSS at lama Bhutankhal Bengali	MVS	Under construction	The previous water supply scheme was damaged due to earthquake and landslide. We witnessed the newly constructed water supply scheme which is under construction.
3.	Kakching	Kakching	Arong Nongmaikho	Arong Nongmaikho	Providing drinking water to schools (rural) of Thoubal district	MVS	Scheme is defunct	Scheme not functional
4.	Kamjong	Kamjong	Kangpat Khunou	Kangpat Khunou	NA	NA	Under construction	Water supply from 4 sumps directly.
5.	Kamjong	Kamjong	Roni	Roni	NA	NA	No scheme	There is no scheme in the village
6.	Kamjong	Phungyar	Thawai (T)	Thawai (T)	Water supply scheme at Thawai (T)	SVS	Scheme is defunct	Tank and reservoir of this scheme was submerged under water as a result of dam's damage
7.	Noney	Nungba	Nungba	Nungba	NA	NA	Scheme is defunct	Scheme is defunct
8.	Noney	Nungba	Tuiphai	Tuiphai	NA	NA	No scheme	There is no scheme in the village
9.	Pherzawl	Tipaimukh	Sipuikon	Sipuikon	NA	NA	Scheme is defunct	There are no current FHTC connected households in the village. Once a scheme, NRDWP under PHED was started in 2013-14 but didn't last even for a month.
10.	Senapati	Paomata	New Laii	New Laii	NA	NA	Scheme is defunct	No water supply
11.	Tamenglong	Tamei	Dunong	Dunong	NA	NA	No scheme	There is no scheme in the village

Functionality Assessment Survey 2020-21- Manipur

S.No.	District Name	Block Name	Panchayat Name	Village Name	Name of largest scheme in the village	Type	Status of the scheme	Remarks
12.	Tamenglong	Tamei	Lamlaba	Lamlaba	Rehabilitation of Water Supply Scheme at New Takou Phase II	MVS	Scheme is defunct	Breakdown by landslide
13.	Tamenglong	Tamei	Old Thenjang	S Songpibung	NA	NA	Scheme is defunct	The scheme had a breakdown since 2009 and there is no repairing.
14.	Tamenglong	Tamei	Pallong	Pallong	NA	NA	Under construction	Scheme is under construction
15.	Tamenglong	Tousem	Kaimai	Kaimai	Providing drinking water to school and Anganwadi at Tamenglong district (Tousem block phase II)	MVS	No scheme	There is no scheme in the village
16.	Tengnoupal	Tengnoupal	Chonjang	Chonjang	NA	NA	Scheme is defunct	Scheme is defunct
17.	Tengnoupal	Tengnoupal	H. Kotlenphai	H. Kotlenphai	Water Supply Scheme at Ringkhudam	SVS	Scheme is defunct	Scheme is defunct
18.	Tengnoupal	Tengnoupal	Tatjang	Tatjang	Arws Scheme at Tatjang	SVS	Scheme is defunct	Scheme is defunct
19.	Thoubal	Thoubal	Lilong Turel Ahanbi (Atoukhong)	Lilong	NA	NA	Scheme is defunct	No water supply since last few years
20.	Ukhrul	Chingai	Luirei Shimpfung	Luirei Shimpfung	Constn. Of SSF At Namrei	MVS	Under construction	Pipeline work under construction
21.	Ukhrul	Chingai	Maremphung	Maremphung	NA	NA	Under construction	No household connection till now even though the village has water reservoir
22.	Ukhrul	Ukhrul	Litan Sareikhong	Litan Sareikhong	NA	NA	Under construction	Under construction

Functionality Assessment Survey 2020-21- Manipur

Annexure 2: List of villages with schemes supplying only through tap stand/stand posts

S.No	District Name	Block Name	Panchayat Name	Village Name	Name of Largest Scheme in the Village	Type	Remarks
1.	Churachandpur	Saikot	Saidan	Saidan	ARWS Scheme Saidan	SVS	No FHTC. Water supply through tap stand only
2.	Churachandpur	Singhat	Singngat	Singngat	Water supply scheme at Singngat	SVS	No FHTC. Water supply through tap stand only
3.	Imphal East	Keirao Bitra	Kiyamgei Muslim Arapti	Kiyamgei Muslim Arapti	Kiyamgei Muslim W/S scheme	MVS	No FHTC. Water supply through tap stand only
4.	Imphal East	Keirao Bitra	Tumukhong Moirangpurel	Moirangpurel	Impv. of Laikhong (Mornthou)	MVS	No FHTC. Water supply through tap stand only
5.	Imphal West	Imphal West - I	Konthoujam	Konthoujam	Augmentation of Konthoujam WSS	MVS	No FHTC. Water supply through tap stand only
6.	Kakching	Kakching	Hiyanglam	Hiyanglam II	Providing safe drinking water to schools of Thoubal district, ph XII to XVI	MVS	
7.	Kakching	Kakching	Waikhong	Waikhong Ningthoumanai	NA	NA	
8.	Kamjong	Kamjong	Phaikok	Phaikok	Reh. Of Khoikai W/S scheme	MVS	
9.	Noney	Haochong	Thingra	Thingra	Providing drinking water to school and Anganwadi at Tamenglong district (Tamenglong block phase III))	MVS	
10.	Noney	Khoupum	Leishok	Leishok	NA	NA	
11.	Noney	Noney	Charoi Chagotlong II	Charoi Chagotlong II	Extension of water supply scheme at Noney IV	MVS	No FHTC at present.
12.	Noney	Noney	Dolang	Dolang	NA	NA	
13.	Noney	Noney	Laphok	Laphok	Providing drinking water to school and Anganwadi at Tamenlong district (Khoupum block phase II)	MVS	
14.	Pherzawl	Thanlon	Leizangphai	Leizangphai	NA	NA	Water supply through tap stand.
15.	Tamenglong	Tamei	Lenglong	Lenglong	NA	NA	The village's new name is "Khangchilun". Villagers

Functionality Assessment Survey 2020-21- Manipur

							are currently using water from the local tanks under water supply scheme at Khongjaron Khunthak. There no household with functional household tap connection at present. The village have single water source. Water is supplied from tap stand.
16.	Tamenglong	Tamenglong	Bhalok	Bhalok	NA	NA	
17.	Tamenglong	Tamenglong	Dailong	Dailong	Providing drinking water to school and Anganwadi at Tamenglong district (Tamenglong block phase V)	MVS	No repair work happening.
18.	Tamenglong	Tamenglong	Khebuching	Khebuching	Providing drinking water to school and Anganwadi at Tamenglong district (Tamenglong block phase III))	MVS	
19.	Tamenglong	Tamenglong	Wairangba	Wairangba	NA	NA	
20.	Tengnoupal	Tengnoupal	Leitan	Leitan	NA	NA	No FHTC. Water supply through tap stand only
21.	Thoubal	Thoubal	Kangyambem	Kangthokchao	NA	NA	Water supply through tap stand.
22.	Ukhrul	Chingai	Phungcham	Phungcham	NRDWP W/S at Poi	MVS	
23.	Ukhrul	Lungchong Meiphai	Ngaimu	Ngaimu	NRDWP W/S scheme at Mayophung	MVS	
24.	Ukhrul	Ukhrul	Shangshak Khullen	Shangshak Khullen	Rural W/S scheme at Nungshong Khullen	MVS	

Annexure 3: List of villages where 15 FHTCs were not found

S.No.	District Name	Block Name	Panchayat Name	Village Name	Name of Largest Scheme in the Village	Type
1.	Chandel	Chakpikarong	Anal Khunou	Anal Khunou	NA	NA
2.	Chandel	Chakpikarong	Khullen Khailet	Khullen Khailet	Augmentation of water supply scheme at Khullen Khailet	SVS
3.	Chandel	Chakpikarong	Khumbung Khullen	Khumbung Khullen	NA	NA
4.	Chandel	Chakpikarong	New Songjang	New Songjang	NA	NA
5.	Chandel	Chakpikarong	S. Mualnom	S. Mualnom	NA	NA
6.	Chandel	Khengjoy	Saibol Joupi	Saibol Joupi	Augmentation of water supply scheme at Saibol Joupi	SVS
7.	Churachandpur	Henglep	Tokpa Kabui	Tokpa Kabui	ARWSP W/S Scheme	SVS
8.	Churachandpur	Sangaikot	Tuinuphai	Tuinuphai	NA	NA
9.	Kamjong	Kasom Khullen	Chongdan	Chongdan	Aug of W/S Scheme at Chongdan	SVS
10.	Kamjong	Kasom Khullen	Lairam Khullen	Lairam Khullen	RWS Scheme at Lairam Khullen	MVS
11.	Tengnoupal	Moreh	Tuipi Mate	Tuipi Mate	NA	NA

Annexure 4: Indicative proportion of functional tap connections by districts

S.No.	District	Percentage Functional Taps
1.	Bishnupur	65.3
2.	Chandel	66.7
3.	Churachandpur	80.9
4.	Imphal East	17.3
5.	Imphal West	59.3
6.	Jiribam*	100.0
7.	Kakching	48.6
8.	Kamjong	100.0
9.	Kangpokpi	88.7
10.	Noney*	68.9
11.	Pherzawl	100.0
12.	Senapati	93.3
13.	Tengnoupal	46.3
14.	Thoubal	37.5
15.	Ukhrul	85.0

* The denominator is less than 50

Annexure 5: List of villages where samples failed for given quality parameter

S.No.	District name	Block name	Gram panchayat name	Village name
Villages with failed water samples for pH test				
1.	Bishnupur	Bishnupur	Toubul G.P.	Toubul
2.	Imphal West	Imphal West - I	Takyel	Takyel Mapal
3.	Tengnoupal	Moreh	Kwatha	Kwatha
Villages with failed water samples for Ammonia test				
1.	Imphal East	Keirao Bitra	Thongju Pt -li	Thongju Pt-li
Villages with failed water samples for Bacteriological present/ absence test using H2S vials				
1.	Imphal East	Sawombung	Khurai Nandeibam Leikai	Khurai Sajor Leikai
2.	Kangpokpi	Saitu Gamphazol	Bungte Chiru	Bungte Chiru