

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

State report

Tripura



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	9
Annexure 3: List of villages where 15 FHTCs were not found	10
Annexure 4: Indicative proportion of functional tap connections by districts	10
Annexure 5: List of villages where samples failed for given quality parameter	10

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 Tripura the survey was conducted in 1058 households from 80 villages in 8 districts.

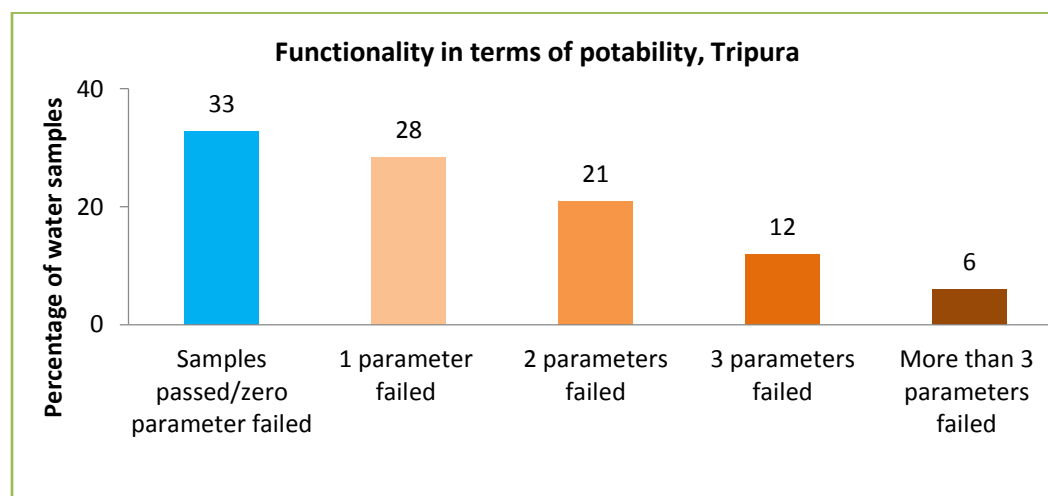
4. Key Findings

SL.	INDICATOR	Tripura	India
Household level			
1	Average household size	4.5	5.6
2	Percent of households using FHTC for drinking purpose	76.0	88.9
3	Percentage of households reported working tap connections (supply at least one day in last 7 days)	92.5	93.6
4	Number of water supply days in a usual week		
4a	1 – 2 days	6.3	7.6
4b	3 – 4 days	3.0	10.4
4c	5 – 6 days	2.9	1.5
4d	7 days	87.7	80.5
5	Number of water supply days in the last week		
5a	0 days	3.3	2.4
5b	1 – 2 days	8.9	9.7
5c	3 – 4 days	5.1	14.8
5d	5 – 6 days	7.6	4.9
5e	7 days	75.1	68.1
6	Percentage of households reporting reliability of water supply days	83.6	86.5
7	Percentage of households reporting tap connections functioning continuously for more than 15 days in a month for last 12 months	87.5	84.6
8	Average number of times water is supplied on the days of supply		
8a	1 time	53.6	56.6
8b	2 times	44.0	28.2
8c	3 times	2.4	6.1
8d	4 times/24 hours	0.0	9.1
9	Percentage of households reporting reliability of supply for different supply timings	74.6	84.3
10	Percentage of households reporting adequate water pressure for different supply timings		
10a	Morning	62.6	80.1
10b	Afternoon	63.6	84.6
10c	Evening	71.4	84.8
11	Percentage of households reported paying water tariff – separately or along with other taxes	10.7	52.8
12	Percentage of households reported receiving 55 lpcd or more	91.5	83.5
13	Percentage of households having potable water *	32.8	61.3
14	Percentage of households reporting regularity of supply	87.6	87.2
15	Percentage of households reporting functional tap connections	27.4	47.8
Village level			
16	Percentage villages having functional water and sanitation committees	11.3	48.5
17	Percentage of functional schemes in the sample villages considering all schemes (supplying water any day in the last 7 days)	86.6	86.0
18	Percentage of in-village schemes having O&M undertaken by village water	88.9	83.1

SL.	INDICATOR	Tripura	India
	and sanitation committee or by Panchayat		
19	Percentage of sample schemes reported having faced challenges in the last one year		
19a	Inadequate infrastructure	40.6	40.2
19b	Poor water availability at the source	15.6	33.0
19c	Poor maintenance	37.5	46.2
19d	Natural calamity	50.0	63.4
20	Percentage of schemes reporting measure to improve source sustainability	56.6	59.9
21	Number of sample villages found with no scheme (defunct/under construction/not handed over/not constructed)	6	751

Figures 1, 2 and 3 depicts the functionality aspects of the household tap connections in Tripura. 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.

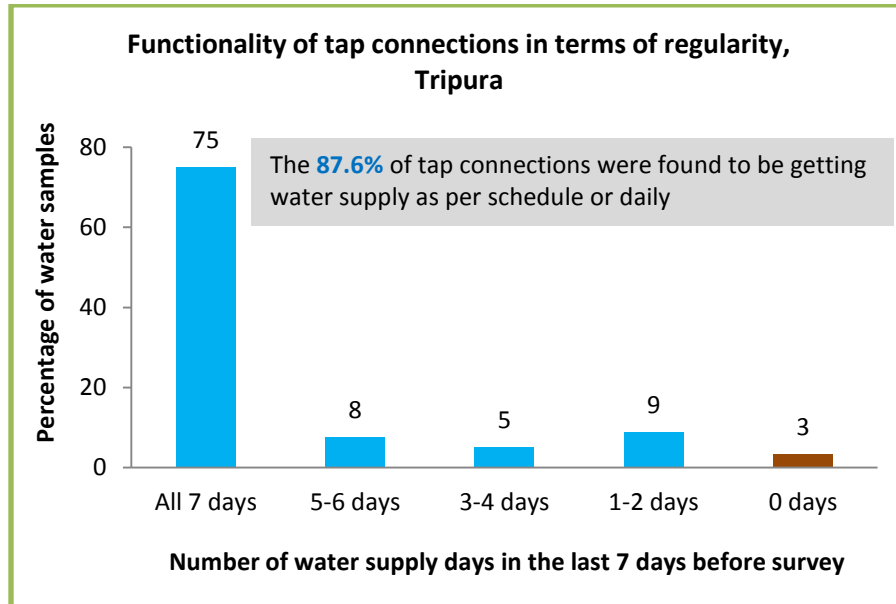
Fig 1: Functionality of the household tap connection in terms of potability - Tripura



Base: Households with water quality testing done, N: 67

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.

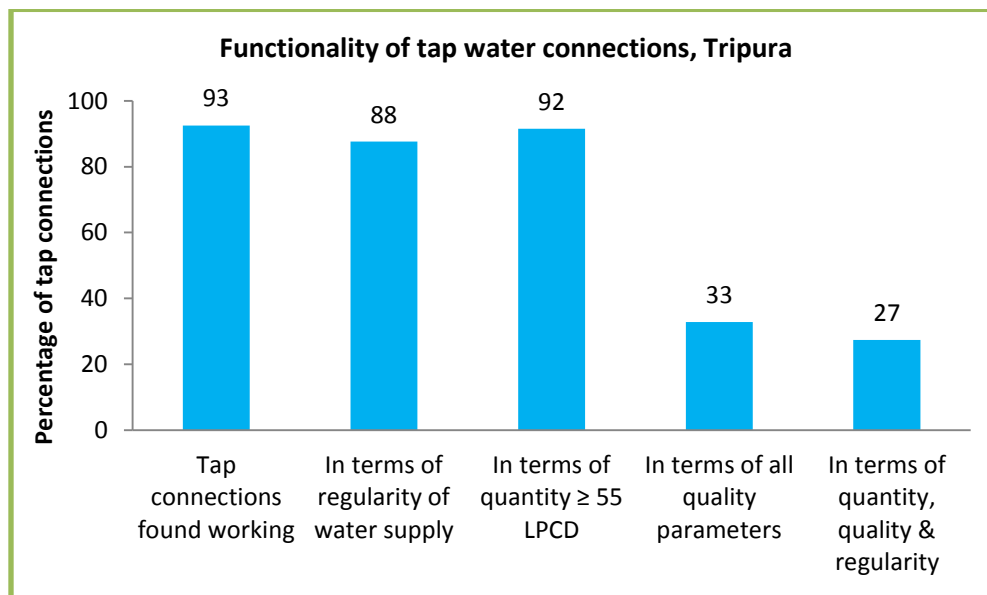
Fig 2: Functionality of the household tap connection in terms of regularity - Tripura



Base: All Households, N: 1058

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 - Tripura

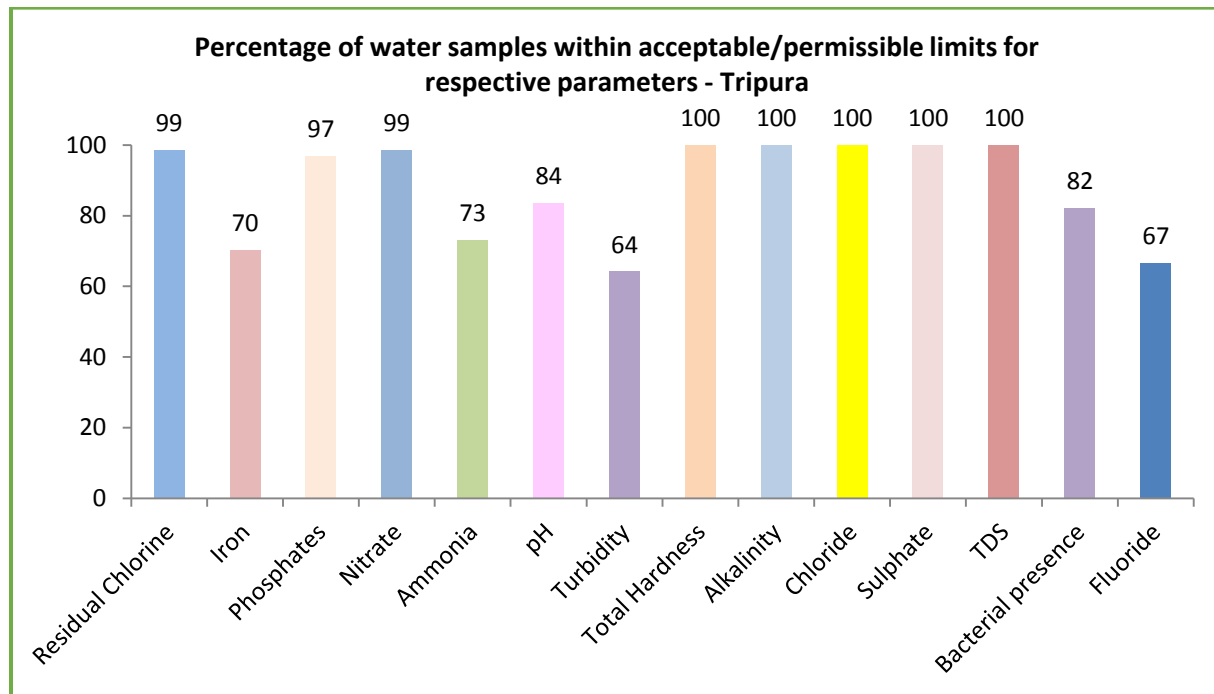


Base: Total count of tap connections considered for functionality assessment, N: 966

A total of 67 water samples were tested as per BIS: 10,500 standards for all 13 parameters. Of these samples, 3 samples included testing for fluoride. 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 (97% or more) Residual Chlorine, Phosphates, Nitrate, Total Hardness, Alkalinity, Chloride, Sulphate and TDS within acceptable /permissible limits. Iron, Ammonia, pH, Turbidity and bacterial presence (total coliform) were the key issues. One third of the samples tested in fluoride affected villages were not found to be within acceptable limits.

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



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



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



5. Conclusions

Tripura had very less functional tap connections (27.4%) as compared with the national average. A high proportion (92%) of tap connections are estimated to supply more than 55 lpcd or more water and about 88 percent of tap connections were found to be supplying water daily or as per schedule. However, the proportion of households receiving potable water is less - about 33 percent. 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 lower proportion of households had functional tap connections is mostly due to the lower proportion of households having a combination of potability and regularity (29.1% households having adequate quantity and potable water; 29.3% households having potable water received on a regular basis; while 82.0% households had adequate quantity of water supply on a regular basis).

The main issues with the samples which were not found potable were Iron, Ammonia, pH, Turbidity and bacteriological (total coliform) presence being above permissible limits.

The proportion of households reporting currently working tap connections in Tripura is high (93%). On a usual basis, almost 88 percent of the households have reported receiving water supply on a daily basis. More than half (53.6%) of the households have reported being supplied water once a day, and the rest, mostly twice a day. 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, only around 11 percent households have reported paying water tariff. 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.

A little more than one tenth of the villages have reported having water and sanitation committees – of these villages, in 89 percent, the water and sanitation committees were actually taking responsibility for operation and maintenance activities of the PWS schemes. As reported by the communities 'natural calamities, inadequate infrastructure and poor maintenance' were the main challenges faced by the schemes. About 57 percent of the schemes had taken any initiatives for source sustainability.

Annexures to this report includes:

- 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

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.	Khowai	Khowai	Jambura	Purba Jambura	DTW at Jambura (Paschim Jambura)	SVS	No scheme	There is no scheme in the village
2.	Khowai	Padma bil	Ramdayal Bari	Ramdayal Thakur Para	DTW at Wandalong Bari	MVS	Scheme is defunct	Scheme is defunct since last 3 years
3.	North Tripura	Dasda	Kangrai	Chutta Kangrai	DTW at Bara Kangrai	SVS	No scheme	There is no scheme in the village
4.	Unakoti	Pecharthal	Nalkata	Gata Cherra	Construction of 1 no.s pump house at Nalkata	SVS	Scheme is defunct	Scheme is defunct
5.	West Tripura	Belbari	Radhapur	Mangalia Para	DTW scheme at Debsingh Thakur Para	MVS	Scheme is defunct	Scheme is not functional since last 3 years
6.	West Tripura	Dukli	Kathaltali	28 Card	DTW at Amtali-II	MVS	No scheme	There is no scheme in the village

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.	Dhalai	Durgachowmuhani	Mohanpur	Muslim Para	SBTW at Goal Mara	SVS	No household connection. Water supply through tap stand only.
2.	Khowai	Kalyanpur	Dakshin Durgapur	Ratia North Para	SBDTW at Ratia Colony	SVS	No household connection. Water supply through tap stand only.
3.	South Tripura	Jolaibari	Abangchara	Chalafaru Mog Para	DTW scheme at Thakurcherra	MVS	No FHTC. Water supply through tap stand only

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.	Gomati	Amarpur	Kurmacherra	Kurma Para	ARWS scheme At Kurma Charra	SVS

Annexure 4: Indicative proportion of functional tap connections by districts

S.No.	District	Percentage Functional Taps
1.	Dhalai	11.4
2.	Gomati	25.2
3.	Khowai	29.5
4.	North Tripura	15.9
5.	Sepahijala	11.1
6.	South Tripura	42.2
7.	Unakoti	48.3
8.	West Tripura	41.0

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 Turbidity test				
1.	Dhalai	Ambassa	Kachimchara	Raj Kumar Choudhury Para
2.	Dhalai	Manu	Paschim Karamcherra	20 Card Para
3.	Dhalai	Manu	Purba Masli	Puran Colony
4.	Dhalai	Salema	Salema	Salema Bazar
5.	Gomati	Kakraban	Uttar Shilghati	Purba Para
6.	Gomati	Karbook	Ichachari	Jalaya Para
7.	Gomati	Matabari	Chandrapur Village	Khil
8.	Gomati	Ompi	Dakshin Taidu	Ram Babu Para
9.	Gomati	Tepania	Amtali	Dakshinchar
10.	Gomati	Tepania	Purba Dhajanagar	School Tilla
11.	Khowai	Khowai	Purba Ganki	Paschim Colony
12.	North Tripura	Jubarajnagar	Kameswar	Sanjoy Colony
13.	North Tripura	Laljuri	Shibnagar	Jayanti Pur
14.	Sepahijala	Bishalgarh	Nabinagar	Khania North Para
15.	Sepahijala	Charilam	Aralia	Uttarmura
16.	Sepahijala	Charilam	Uttar Charilam	Puran Bari
17.	Sepahijala	Jampuijala	Jampuijala	Jampuijala Bazar
18.	Sepahijala	Nalchar	Kemtali	Kemtali
19.	South Tripura	Bagafa	Kathaliacherra	Panchayat Para
20.	Unakoti	Kumarghat	Dudpur	Malakar Para
21.	West Tripura	Bamutia	Purba Gandhigram	Rajnagar

Functionality Assessment Survey 2020-21- Tripura

S.No.	District name	Block name	Gram panchayat name	Village name
22.	West Tripura	Hezamara	Barkhatal	Barkathal
23.	West Tripura	Jirania	Durganagar	Durganagar East
24.	West Tripura	Mandai	Wakhinagar	Kainta Kobra Para
Villages with failed water samples for pH test				
1.	Dhalai	Ambassa	Kachimchara	Raj Kumar Choudhury Para
2.	Dhalai	Manu	Paschim Karamcherra	20 Card Para
3.	Dhalai	Manu	Paschim Kathalcherra	Kuki Charra
4.	Dhalai	Salema	Salema	Salema Bazar
5.	Khowai	Kalyanpur	Dwarikpur	Dwarikapur
6.	Khowai	Teliamura	Khashia Mangal	Mangal Sardar Para
7.	Sepahijala	Kathalia	Manaipathar	Manaipathar Para
8.	South Tripura	Rupaichari	Rupaichari	Parimal Das Chowdhury Para
9.	South Tripura	Satchand	Manu Bazar	Santi Para
10.	Unakoti	Gournagar	Goldharpur	Goldharpur
11.	West Tripura	Mandai	Wakhinagar	Kainta Kobra Para
Villages with failed water samples for Ammonia test				
1.	Dhalai	Dumburnagar	Pancharatan	Ramlusan Karbari Para
2.	Dhalai	Manu	Paschim Karamcherra	20 Card Para
3.	Dhalai	Manu	Purba Masli	Puran Colony
4.	Dhalai	Salema	Salema	Salema Bazar
5.	Gomati	Kakraban	Uttar Shilghati	Purba Para
6.	Gomati	Ompi	Dakshin Taidu	Ram Babu Para
7.	Gomati	Tepania	Amtali	Dakshinchar
8.	North Tripura	Damcherra	Damcherra	Damcherra North
9.	North Tripura	Dasda	Paschim Satnala	Satrala Proper West
10.	Sepahijala	Bishalgarh	Nabinagar	Khania North Para
11.	Sepahijala	Charilam	Aralia	Uttarmura
12.	Sepahijala	Charilam	Dakshin Charilam	Chowmuhini Para
13.	Sepahijala	Charilam	Uttar Charilam	Puran Bari
14.	Sepahijala	Kathalia	Manaipathar	Manaipathar Para
15.	South Tripura	Hrishyamukh	Gaburcherra	Bindaban Para
16.	South Tripura	Hrishyamukh	Sarashima	Master Para
17.	South Tripura	Jolaibari	Abangchara	Chalafu Mog Para
18.	Unakoti	Kumarghat	Ujandudpur	Shyam Deb Para
Villages with failed water samples for Phosphate test				
1.	Dhalai	Manu	Purba Masli	Puran Colony
2.	South Tripura	Rupaichari	Rupaichari	Parimal Das Chowdhury Para
Villages with failed water samples for Residual Chlorine test				
1.	North Tripura	Laljuri	Shibnagar	Jayanti Pur
Villages with failed water samples for Iron test				
1.	Dhalai	Salema	Salema	Salema Bazar
2.	Gomati	Kakraban	Uttar Shilghati	Purba Para

Functionality Assessment Survey 2020-21- Tripura

S.No.	District name	Block name	Gram panchayat name	Village name
3.	Gomati	Karbook	Ichachari	Jalaya Para
4.	Gomati	Ompi	Dakshin Taidu	Ram Babu Para
5.	Gomati	Tepania	Amtali	Dakshinchar
6.	Gomati	Tepania	Purba Dhajanagar	School Tilla
7.	North Tripura	Jubarajnagar	Kameswar	Sanjoy Colony
8.	North Tripura	Laljuri	Shibnagar	Jayanti Pur
9.	North Tripura	Panisagar	Deocherra	North Deo Cherra
10.	North Tripura	Panisagar	Purba Rowa	9 Drone
11.	North Tripura	Panisagar	Rowa	32 Drone
12.	Sepahijala	Bishalgarh	Nabinagar	Khania North Para
13.	Sepahijala	Charilam	Aralia	Uttarmura
14.	Sepahijala	Charilam	Dakshin Charilam	Chowmuhini Para
15.	Sepahijala	Jampuijala	Jampuijala	Jampuijala Bazar
16.	Sepahijala	Nalchar	Kemtali	Kemtali
17.	South Tripura	Bagafa	Kathaliacherra	Panchayat Para
18.	Unakoti	Kumarghat	Dudpur	Malakar Para
19.	Unakoti	Kumarghat	Ujandudpur	Shyam Deb Para
20.	West Tripura	Bamutia	Purba Gandhigram	Rajnagar
Villages with failed water samples for Nitrate test				
1.	Dhalai	Manu	Purba Masli	Puran Colony
Villages with failed water samples for Bacteriological present/ absence test using H2S vials				
1.	Dhalai	Chawmanu	Paschim Chawmanu	Bazar Colony
2.	Dhalai	Manu	Paschim Karamcherra	20 Card Para
3.	Dhalai	Manu	Purba Masli	Puran Colony
4.	Dhalai	Salema	Salema	Salema Bazar
5.	Gomati	Ompi	Dakshin Taidu	Ram Babu Para
6.	Khowai	Tulasikhar	Takchayabari	Uttar Jam Tilla
7.	North Tripura	Panisagar	Purba Rowa	9 Drone
8.	Sepahijala	Charilam	Bisramganj	Ramakrishna Vivekananda Pally
9.	Sepahijala	Kathalia	Manaipathar	Manaipathar Para
10.	Sepahijala	Nalchar	Kemtali	Kemtali
11.	South Tripura	Hrishyamukh	Sarashima	Master Para
12.	Unakoti	Kumarghat	Ujandudpur	Shyam Deb Para
Villages with failed water samples for Fluoride test				
1.	Dhalai	Salema	Salema	Salema Bazar