REPORT

Workshop for Institutionalising an Impact Assessment Framework for Drink from Tap (DFT) Mission in Odisha

CONDUCTED ON

8 NOVEMBER 2024

UNNATI BHAWAN,
BHUBANESWAR

WATCO

National Institute of Urban Affairs

Workshop for Institutionalizing an Impact Assessment Framework for Drink from Tap Mission in Odisha

8th November 2024

2nd Floor, Conference Hall, Unnati Bhawan, Bhubaneswar

Background:

Since February 2024, The National Institute of Urban Affairs (NIUA) and the Water Corporation of Odisha (WATCO), Housing and Urban Development Department, Odisha have been working on a project to assess the efficacy of the 'Drink from Tap' (DFT) schemes in 24 Urban Local Bodies (ULBs) across Odisha. The main objective of the project is to understand the on-ground impact of the DFT scheme and capture key issues and challenges that may have a bearing on the long-term sustainability of the DFT Mission.

In line with the objectives of the project, NIUA has developed a '**Rapid Impact Assessment Tool**' for WATCO to make a quick and reliable evaluation of the DFT projects. The Tool comprises thirty-six indicators across three themes:

1. Technical Efficiency (quantitive indicators)
2. Operations and Maintenance (both qualitative and quantitative indicators)
3. Consumer Perception (qualitative indicators)

The details of the Tool are presented in **Annexure 1**.

Objective of the Workshop:

While NIUA will be using the Rapid Impact Assessment Tool to evaluate ongoing DFT projects in 24 ULBs, it is important that WATCO officials are familiar with the Tool so that they can carry out regular annual assessments in future.

To address this need, a workshop was organized by NIUA on 8th November 2024 at Unnati Bhawan (2nd floor Conference Hall) inviting managers and general managers of the 24 ULBs as participants. The agenda for the workshop is presented in **Annexure 2**.

The primary objective of the workshop was to present the Rapid Impact Assessment Tool developed by NIUA and to gather essential feedback and suggestions from the participating WATCO officers to strengthen it. Additionally, the workshop aimed at building the capacities of participants in the use and application of the Tool and to discuss its utility on the ground. The underlying objective was also to gather

experiences of running the DFT scheme in each city from the respective WATCO officials. A total of 10 officers representing 15 cities participated in the Workshop. **Annexure 3** has the registration details of attendees.

Sl. No.	Participant Name	Designation	Cities Represented
1	Mr Prafulla Behera	Manager	Nimapara
2	Ms Sujata Priyadarshan	Manager	Cuttack, Vyasanagar
3	Mr Shivadarshi Das	Assistant Manager	Puri
4	Mr Sarada Prasanna Nayak	General Manager	Bhubaneswar Div I
5	Mr Rajendra Nath Nayak	General Manager	Bhubaneswar Div II
6	Mr Kasinath Beshra	General Manager, Keonjhar	Keonjhar, Champua, Joda, Barbil, Anandpur
7	Mr Bikash Chandra Padhi	General Manager, Behrampur	Behrampur, Gopalpur
8	Mr Sridhar Das	Assistant Manager	Hinjlicut
9	Mr Purna Chandra Mallick	Manager	Rairangpur
10	Mr Dusmanta Tarai	Manager	Rourkela

Workshop Overview:

The workshop was designed to present the rapid assessment tool developed by NIUA and to showcase the findings of tool implemented in one of the DFT cities i.e. Nimapara. The workshop was structured into four sessions:

1. **Session 1:** The workshop began with an overview of the project, outlining the background and processes involved in the previous impact assessment conducted in 2021. The team highlighted the comprehensive impact assessment study carried out in Puri and Bhubaneswar. This session detailed the methodologies applied during the 2021 study, emphasizing how these approaches helped to establish indicators and gather insights on the water supply infrastructure in the cities. The details of the study are covered in **Annexure 4**.

2. **Session 2:** Following the introductory session, the updated framework for the 2024 Impact Assessment Study was presented to the WATCO officials. This session detailed the significance of the technical, operational, and consumer perception indicators' and the scoring methodology associated with each indicator to assess the infrastructural reliability, maintenance and service quality along with user satisfaction criteria. It was also discussed that this framework was established to ensure a comprehensive evaluation that informs future project improvements and evaluation.

Figure 1: The three themes of the Rapid Impact Assessment Tool

- During the discussion it was highlighted that the rapid impact assessment tool is designed to capture the various aspects associated with the water supply system in any city/town such as source sustainability, service delivery, operational efficiency, financial viability and socio-economic condition.
- For the technical evaluation, the assessment will focus on eight key *service-level benchmarks*, ensuring a comprehensive analysis of the system's performance and effectiveness. Various national and international standards and guidelines published by the *Ministry of Housing and Urban Affairs* (MoHUA, Government of India)[1], the *Bureau of Indian Standards* (BIS)[2], *World Health Organization* (WHO)[3], *International Water Association* (IWA)[4], etc. have been referred to for the service-level benchmarks.
- For operation and maintenance, the evaluation framework will encompass both *qualitative* and *quantitative indicators*, offering a balanced view of the infrastructure's operational health and maintenance efficiency.
- To understand consumer perception, a *sample survey of 75 households* will be conducted in each city, capturing insights from both *slum and non-slum areas*. This approach aims to provide an inclusive perspective on user satisfaction and accessibility across diverse communities.
- The method to calculate the overall city score was discussed with the officials, i.e., the average of all the technical score, operation and maintenance score and consumer perception score obtained by any city.
- Key issues identified during the pilot study were discussed, including the potential causes behind these challenges and the suggested recommendations to improve drawbacks.

3. **Session 3:**
   - A pilot run of the Rapid Impact Assessment Framework was conducted in the city of Nimapara in September 2024. In Nimapara, the DFT supply was introduced in one of the DMAs in 2020, and it

[1] https://mohua.gov.in/upload/uploadfiles/files/Indicators%26Benchmarks(1).pdf
[2] https://cpcb.nic.in/wqm/BIS_Drinking_Water_Specification.pdf
[3] https://www.who.int/publications/i/item/9789240088740
[4] https://www.iwa-network.org/filemanager-uploads/WQ_Compendium/Database/Future_analysis/094.pdf

expanded to three other DMAs over the course of two years. For the purpose of this survey, data was collected from a total of 75 households spread across slums (like Muslim Basti, Sweeper's Colony) and non-slum areas (like Bagha Sahi, Gadaandhia Sahi, Patitapaban Patana, Patapur, etc.

- In the third session, the team presented findings from Nimapara's pilot study. The session included a detailed presentation of data and insights gathered across various indicators, highlighting both successes and areas for improvement in the city. A glimpse of the survey results gathered from Nimapara is highlighted in **Annexure 5**.

- Inferences from the Technical Evaluation Study of Nimapara:
  a) The Scheme can be expanded to the rest of the areas to cover the entire city population in Nimapara.
  b) Bill collection efficiency data presents a scope for improvement.
  c) The energy used in running the system is more than the benchmark value and thus needs to be reduced.

4. **Session 4:** In the last session of the workshop and open-floor discussion was conducted, where participants were encouraged to share their feedback on the presented framework, findings, and recommendations. This interactive session allowed stakeholders to ask questions, provide insights, and explore possible adjustments to the assessment strategy.

Feedback from the Officials:

The Impact Assessment Framework Tool developed and presented by the NIUA team was appreciated by WATCO officials. The participants understood the primary idea behind developing an impact assessment framework and were mostly satisfied with the indicators selected for the Tool. Their suggestions and feedback, as gathered during the Workshop, can help chisel the Tool in a number of ways. These are listed below:

1. With respect to the 5th indicator under the 'Operations and Maintenance (quantitative) category, i.e, '**Number of days with unplanned water interruptions'**, it was suggested to establish a clear definition and categorization for 'unplanned interruptions'. It was highlighted that, unplanned indicators are usually unpredictable and may occur due to various technical issues like dysfunctional welded joints, ongoing construction work or dysfunctional water pumps, like the issue of erroneous water pumps takes the longest to redress. Thus, it was suggested that the **benchmark value for this indicator should be increased to '1 or 2 days'** from the currently considered value of '0'.

2. Another suggestion by the officials was on the indicator under the same category, i.e. 'Service Complaints per 1000 connections'. It was suggested that both the **number and nature of complaints** should be accounted for in the tool to identify specific recurring issues.

3. According to the officials, the concerns and gaps need to be captured through this Tool. It was suggested to add a new **column within the Tool which captures the technical gaps** against each indicator. Moreover, a recommendation sheet can be introduced based on the data gathered from

each city to systematically identify and address gaps in performance scores for prompt action in the future.

While these recommendations are highly valuable in refining the Tool, some additional recommendations captured the concerns of the officials regarding the entire DFT system. These are essential to be addressed for efficient functioning of DFT scheme and can be addressed through the framework by identifying the gaps. These are:

1. Manpower and Staffing Concerns**:**
   The officials highlighted the insufficient manpower to carry out routine assessments and manage interruptions effectively. It was suggested that the gaps in current skill set needs to be addressed by providing training on modern technology and water management practices. This can be done by collaborating with the Odisha Water Academy for on-field training programs, particularly in civil, electronics, and technical disciplines, for comprehensive skill development.

2. Operational Recommendations:
   It should be ensured that Water Treatment Plant (WTP) intake capacity is aligned with demand, particularly during peak seasons such as the monsoons. Additionally, these WTPs should be equipped with adequate water sources to support consistent and equitable distribution.

3. Water Quality Management and Testing:
   The water quality needs to be emphasized by increasing testing frequency and expanding WTP facilities in each ULB. Moreover, laboratories need to be established at both divisional and sub-divisional level to facilitate continuous quality monitoring.

4. Demand Forecasting and Infrastructure Upgrades:
   They also suggested that the demand fluctuations due to uninterrupted water supply should be monitored and managed continuously. For this, infrastructure upgrades may be facilitated at the source level to accommodate increased water demand.

5. SPVs and International Standards:
   Another suggestion underlined the requirement of designated Special Purpose Vehicle (SPVs) to lead educational and awareness initiatives for the Drink from Tap (DFT) program, ensuring alignment with international standards.

Figure 2: Workshop with WATCO officials for Institutionalizing the Impact Assessment Framework for Drink from Tap (DFT) Mission

Annexure 1

Proposed Rapid Assessment Framework

IMPACT ASSESSMENT TOOL

National Institute of Urban Affairs (NIUA) has developed a Rapid Assessment tool to understand the impact of the Drink From Tap (DFT) mission implemented in the 24 ULBs in Odisha

- Holistic
- Rapid
- Enables Periodic Assessment
- Assesses On-ground Impact

METHODOLOGY

The rapid impact assessment tool is designed to capture the various aspects associated with the water supply system in any city/town such as **source sustainability, service delivery, operational efficiency, financial viability and Socioeconomic condition**

TECHNICAL EVALUATION

To evaluate the system's efficiency in providing the services

OPERATION AND MAINTENANCE

To evaluate the long-term effectiveness of the system

CONSUMER PERCEPTION

To evaluate the impact of the mission from the perspective of end-users

TECHNICAL EVALUATION

Water Supply Coverage by Population

Per Capita Water Supplied

Extent of Metering

Non-revenue Water

Service Level Benchmarks

Bill Collection Efficiency

Cost Recovery

Energy Usage

Water Quality Conformance

1. Water supply coverage by population

Benchmark: 100%

1	2	3	4	5
0-24	25-49	50-74	75-99	100

2. Per capita water supplied

Benchmark: 135 lpcd

1	2	3	4	5
<50	51-78	79-106	107-134	135

3. Extent of metering

Benchmark: 100%

1	2	3	4	5
0-24	25-49	50-74	75-99	100

4. Non-revenue water

Benchmark: less than 20%

1	2	3	4	5
>50	40-50	30-40	20-30	<20

5. Bill collection efficiency

Benchmark: More than 90%

1	2	3	4	5
<30	30-50	50-70	70-90	100

6. Cost recovery

Benchmark: At least 100%

1	2	3	4	5
0-24	25-49	50-74	75-99	= or >100

7. Energy usage

Benchmark: Less than 0.55kWh/m3

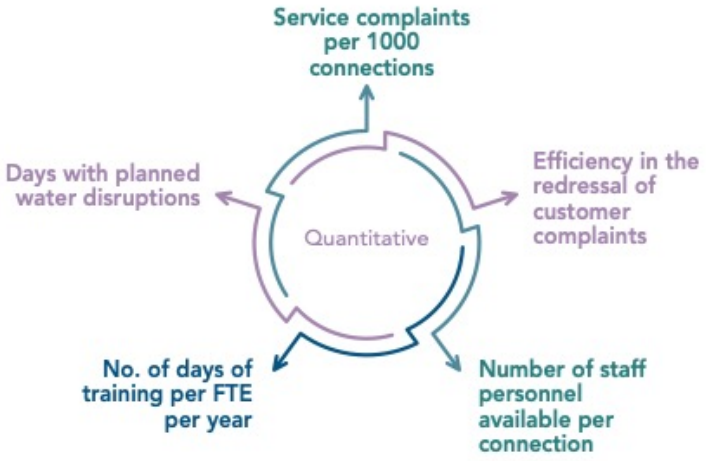
1	2	3	4	5
>1.15	0.96-1.15	0.76-0.95	0.56-0.75	<0.55

8. Water quality conformance

Benchmark: less than 100%

1	2	3	4	5
0-24	25-49	50-74	75-99	100

OPERATION AND MAINTENANCE



QUANTITATIVE EVALUATION

+

QUALITATIVE EVALUATION

Service complaints per 1000 connections

Benchmark: 20/year

$$\frac{\text{Number of complaints of quality of service during the assessment period} \times \frac{365}{\text{Assessment Period}}}{\text{Number of service connections}} \times 1000$$

1	2	3	4	5
>80 or <5	61-80	41-60	21-40	6-20

Efficiency in the redressal of customer complaints

Benchmark: 80%

$$\frac{\text{Total number of complaints redressed within the month}}{\text{Total number of water supply related complaints received per month}} \times 100$$

1	2	3	4	5
<20	20-39	40-59	60-79	80 or >80

Number of staff personnel available per connection

Benchmark: 4/1000 connections

$$\frac{\text{Total number of staff personnel}}{\text{Total Number of connections}} \times 1000$$

1	2	3	4	5
0 or>5	1	2	3	4-5

No. of days of training per FTE per year

Benchmark: 5 day/year/person

1	2	3	4	5
1 or 0	2	3	4	5

Total number of days of training per staff per year

Days with unplanned water disruptions

Benchmark: 0 days

1	2	3	4	5
7 or more	5-6	3-4	1-2	0

$$\frac{\text{Number of days with water disruptions}}{365} \times 100$$

OPERATION AND MAINTENANCE

1.	How reliable is the source of water used to meet the city's water demand through the DFT Mission
2.	How would you rate the current staffing levels and organizational structure at WATCO for successfully carrying out the Drink from Tap (DFT) Mission and managing water supply operations?
3.	How manageable is the workload and stress associated with implementing a 24x7 water supply?
4.	How effective are the advocacy initiatives to communicate the tenets and progress of the DFT to the beneficiaries of the scheme?
5.	How effective is the Jal Saathis initiative to improve community engagement and awareness regarding water conservation and management?
6.	How effective is the coordination between WATCO and other relevant government departments (e.g., electricity dept, roads etc.) during the implementation as well as O&M phase for the Drink from Tap Mission?
7.	Option that best describes the level of data management practiced by WATCO to implement the Drink from Tap Mission?
8.	How efficient are the administrative and approval processes involved in the implementation of the Drink for Tap scheme?

QUANTITATIVE EVALUATION

+

QUALITATIVE EVALUATION

		1	2	3	4	5
1.	How reliable is the source of water used to meet the city's water demand through the DFT Mission	Highly Unreliable	Unreliable	Neutral	Reliable	Highly Reliable
2.	How would you rate the current staffing levels and organizational structure at WATCO for successfully carrying out the Drink from Tap (DFT) Mission and managing water supply operations?	Very Inadequate	Inadequate	Neutral	Adequate	Very Adequate
3.	How manageable is the workload and stress associated with implementing a 24x7 water supply?	Highly Unmanageable	Unmanageable	Neutral	Manageable	Highly Manageable
4.	How effective are the advocacy initiatives to communicate the tenets and progress of the DFT to the beneficiaries of the scheme?	Very Ineffective	Ineffective	Neutral	Effective	Highly Effective
5.	How effective is the Jal Saathis initiative to improve community engagement and awareness regarding water conservation and management?	Very Ineffective	Ineffective	Neutral	Effective	Highly Effective
6.	How effective is the coordination between WATCO and other relevant government departments (e.g., electricity dept, roads etc.) during the implementation as well as O&M phase for the Drink from Tap Mission?	Very Ineffective	Ineffective	Neutral	Effective	Highly Effective
7.	Option that best describes the level of data management practiced by WATCO to implement the Drink from Tap Mission?	No data Collection	Basic Data Collection	Collected & Classified	Collected, Classified & Analysed	Collected, Classified & Analysed
8.	How efficient are the administrative and approval processes involved in the implementation of the Drink for Tap scheme?	Very Inefficient	Inefficient	Neutral	Efficient	Very Efficient

CONSUMER PERCEPTION

SLUMS

+

NON SLUMS

1. What is the source of water for members of your household

1	2	3	4	5
Non-SUJAL	SUJAL + 3 other source	SUJAL + 2 other source	SUJAL + 1 other source	SUJAL

2. Time saved by household for water fetching after SUJAL

1	2	3	4	5
No time saved	<15 mins	15-30 mins	30-60 mins	>60 mins

3. Frequency of storing water after SUJAL

1	2	3	4	5
Everyday	Often (once in 2 days)	Sometimes (once in a week)	Rarely (once in a month)	Never

4. Benefit(s) of the SUJAL scheme

1	2	3	4	5
No benefit	1 out of 5 benefits	2 out of 5 benefits	3 out of 5 benefits	4 out of 5 benefits

5. Interruptions in water supply

1	2	3	4	5
Daily	few times a week	Once a week	Once a month	Once or twice a year

6. Pressure variations in water supply

1	2	3	4	5
Daily	few times a week	Once a week	Once a month	Once or twice a year

7. Consistency of the water supply throughout the year

1	2	3	4	5
Throughout the year	In summers	Can't tell	During festival days	No variations

8. Satisfaction with the quality of water

1	2	3	4	5
Not Satisfied	Not sure	Neutral	Mostly satisfied	Satisfied

9. Reason for treating the water

1	2	3	4	5
Unacceptable taste	Unacceptable smell & colour	Not sure of the quality	Already had filter installed	Do not treat

10. Frequency of waterborne diseases reduced after SUJAL

1	2	3	4	5
No change		Can't tell		Yes

11. Water bill generation

1	2	3	4	5
Never	Once in 6-12 month	Once in 3-5 month	Once in 2-4 month	Once in a month

12. Satisfaction with the pricing of water

1	2	3	4	5
Haven't received bill	Dissatisfied	Don't know the pricing/new connection	Neutral	Satisfied

13. Complain related to SUJAL water service since the provision of services

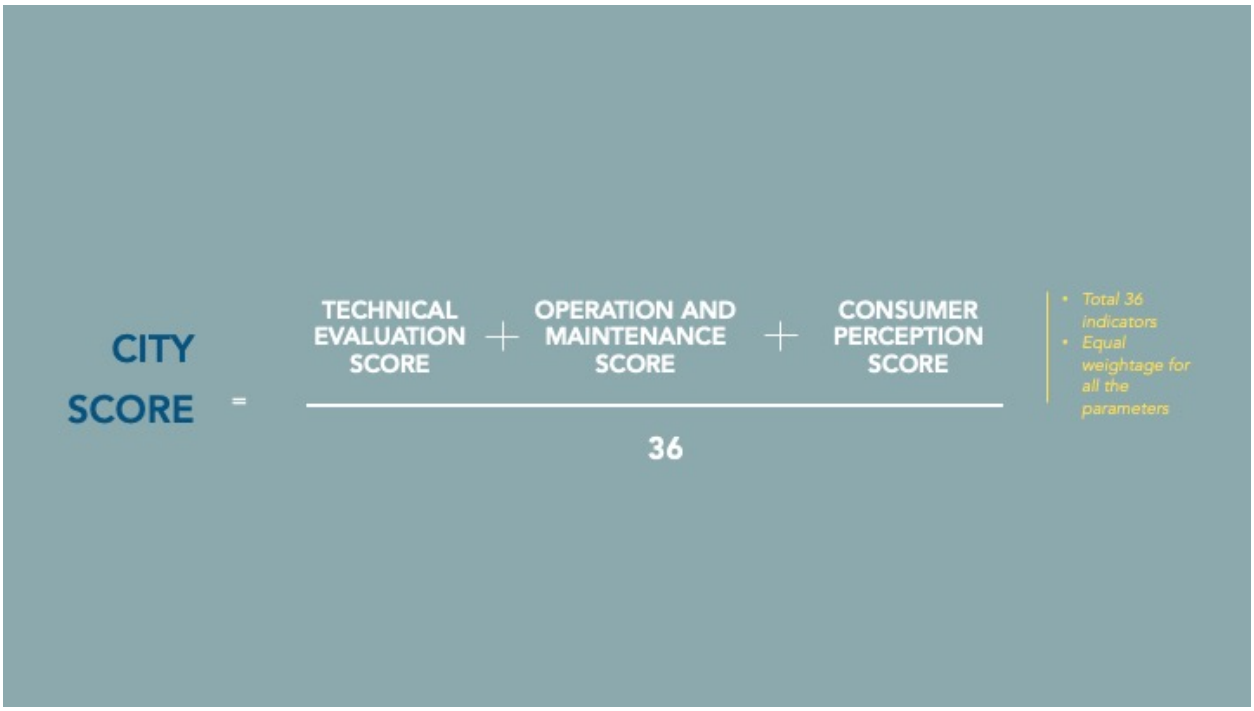
1	2	3	4	5
Don't know how to raise complains	more than 6 times	4-5 times	2-3 times	Once in a while

14. Satisfaction with the resolution of complaints

1	2	3	4	5
Dissatisfied	Don't know how to raise complains	Neutral	Mostly satisfied	Satisfied

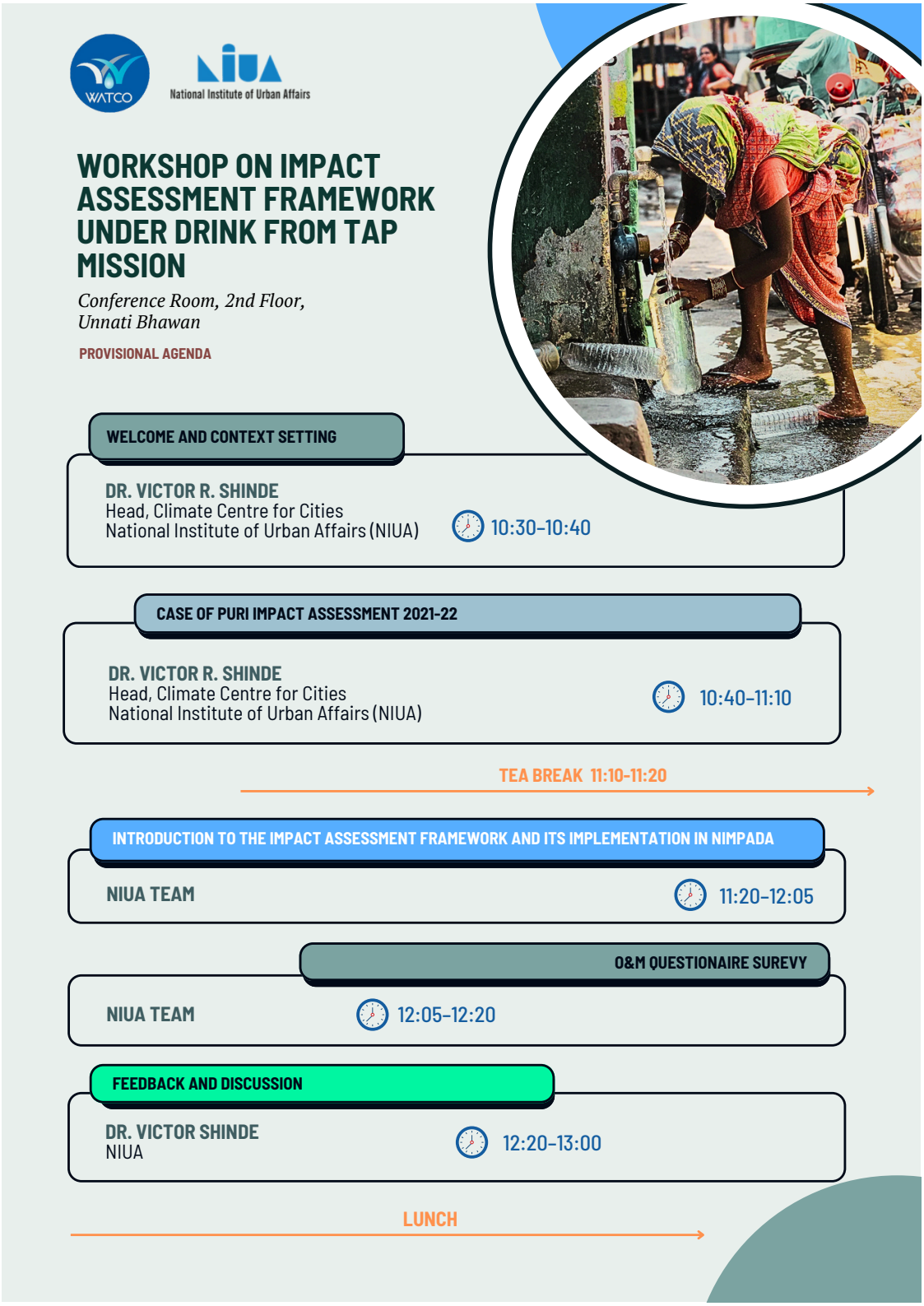
15. Reason for not consuming SUJAL water directly

1	2	3	4	5
Not confident of water quality	Not aware it can be consumed directly	Not confident of the sump/storage tanks	Not confident of the pipe network in the building	Already directly drink from tap


CITY SCORE
=
TECHNICAL EVALUATION SCORE
+
OPERATION AND MAINTENANCE SCORE
+
CONSUMER PERCEPTION SCORE
36
Total 36 indicators
Equal weightage for all the parameters

Annexure 2

Agenda for the Workshop held on 8th November 2024



Annexure 3

Registration sheets from the Workshop

WATCO | NIUA National Institute of Urban Affairs

WORKSHOP ON IMPACT ASSESSMENT FRAMEWORK

Under Drink From Tap (DFT) Mission

8th Nov 2024, Friday

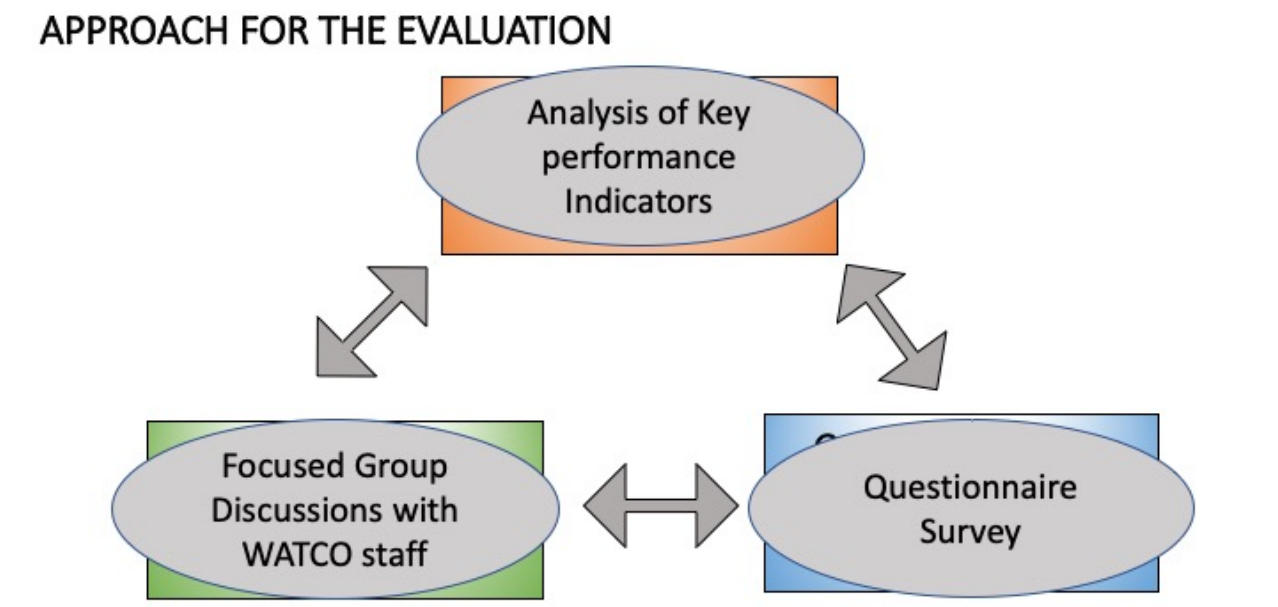
~~4th~~ 2nd Floor, Conference Room, Unnati Bhawan, Bhubaneswar

S.No.	Name	Designation	City	Email Id	Contact No.
1	Dusmanta [illegible]	Asst. Manager	Rourkela	dusmanta.ideal9@gmail.com	7653094187
2.	Sujata Priyadarshi	Manager	Cuttack	sujatar[illegible]@gmail.com	79[illegible]
3.	Shiradarshi Das	Asst. Manager	Puri WTP	shiradarshidas gmail.com	9437811901
4	Sarada Prasanna Nayak	G M WATCO DIV-1	BBSR	[illegible].sarada2350@hotmail.com	8908284693
5	Sridhar Das	Asst. manager	[illegible]	sridhardas2012@gmail.com	9437153892
6	R. K. [illegible]	G. M.-II WATCO BBSR	Bhubaneswar	[illegible]@gmail.com	9437184245
7.)	Binash Ch. padhi	GM, Berhampur	Brahmapur	[illegible].cet @ gmail.com.	8249538543
8.	Kashinath Besbra.	Manager, WATCO, Keonjhar	Keonjhar	Kashinath215@gmail.com.	789430202[illegible]

S.No.	Name	Designation	City	Email Id	Contact No.
9	Purna Chandra Mallick	Manager (WATCO) Rayagada	Rayagada	[illegible]	9437274382
10	Prafulla Kr. Behera	Manager - WATCO Nimapara (CNTUA)	Nimapara	[illegible]	9437026999
11	Ruchika Mohanty	Project Associate	—	ruchika@niua.org	7978218529
12	Abhijit Rath	Project Associate	—	abhijitrath@niua.org	8280087581
13	Sushree Sarika Sharma		—		
14	Madhusmita Jena				
15	[illegible]				
15	Shreya Khurana	Project Associate		shreya@niua.org	8860610579

Annexure 4

Drink from Tap Assessment in Puri and Bhubaneswar (2021)



SYSTEM EFFICIENCY

Key Performance Indicators

			Benchmark
Water supply coverage by population (%)	=	$\frac{\text{Households covered under DFT supply in the DMA}}{\text{Total number of households in the DMA}} x100$	100%
Per capita water supplied (lpcd)	=	$\frac{\text{Total water supplied to the DMA}}{\text{Population served in the DMA}} x100$	135 lpcd
Extent of metering (%)	=	$\frac{\text{Number of households with functional meters}}{\text{Total number of households}} x100$	100%
Non Revenue Water (%)	=	$\frac{\text{Billable water volume in the DMA}}{\text{Water supplied to the DMA}} x100$	<20%

3

SYSTEM EFFICIENCY

Key Performance Indicators

			Benchmark
Bill collection efficiency (%)	=	$\frac{\text{Number of households paying bills in the DMA}}{\text{Number of metered households in the DMA}} x100$	90%
Operating cost recovery (%)	=	$\frac{\text{Operating revenue for the entire system}}{\text{Operating costs for the entire system}} x100$	100%
Water quality conformance (%)	=	$\frac{\text{Number of water quality samples meeting } \mathbf{ALL} \text{ standards}}{\text{Number of water quality samples tested}} x100$	100%
Energy usage (kWh/m³)	=	$\frac{\text{Total energy consumption in a month}}{\text{Volume of water produced in a month}} x100$	0.5 kWh/m³

4

SYSTEM EFFICIENCY

Key Results

No	Indicator	Bhubaneshwar	Puri
1	Water supply coverage by population	👍	👍
2	Per capita water supplied	111 lpcd in Salia Sahi -1 85 lpcd in Salia Sahi -2	👍
3	Extent of metering	👍	👍
4	Non revenue water	👍	👍

5

SYSTEM EFFICIENCY

Key Results

No	Indicator	Bhubaneshwar	Puri
5	Bill collection efficiency	Niladri Vihar: 85% Isaneshwar Basti: 85%	👍
6	Operating cost recovery	NA	Problem (37.41%)
7	Water quality conformance	NA	👍
8	Energy usage	NA	👍

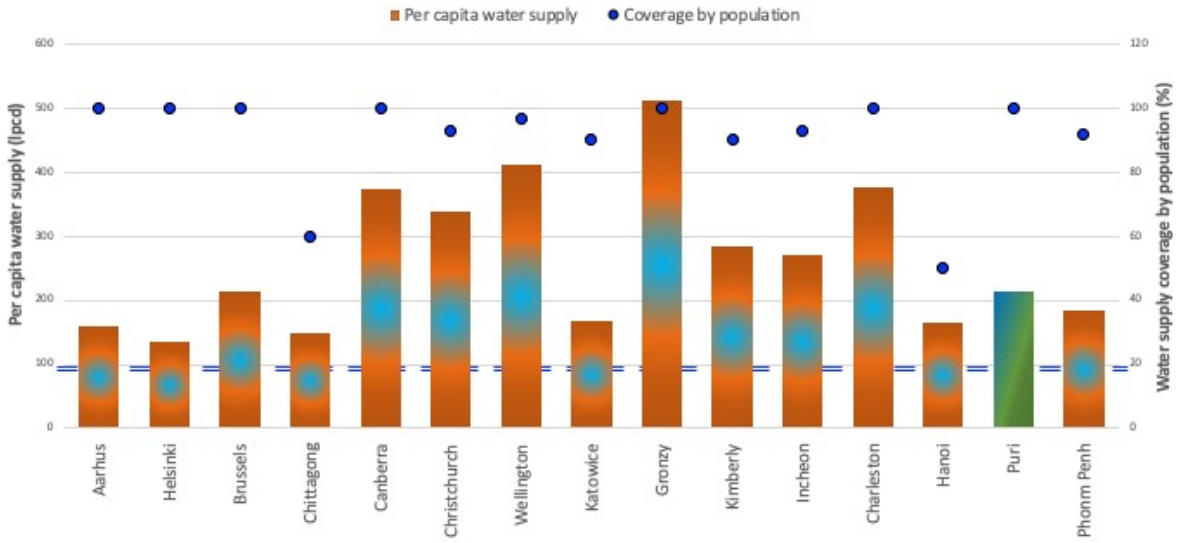
6

SYSTEM EFFICIENCY

"Comparison" and "Contrast" with similar sized utilities

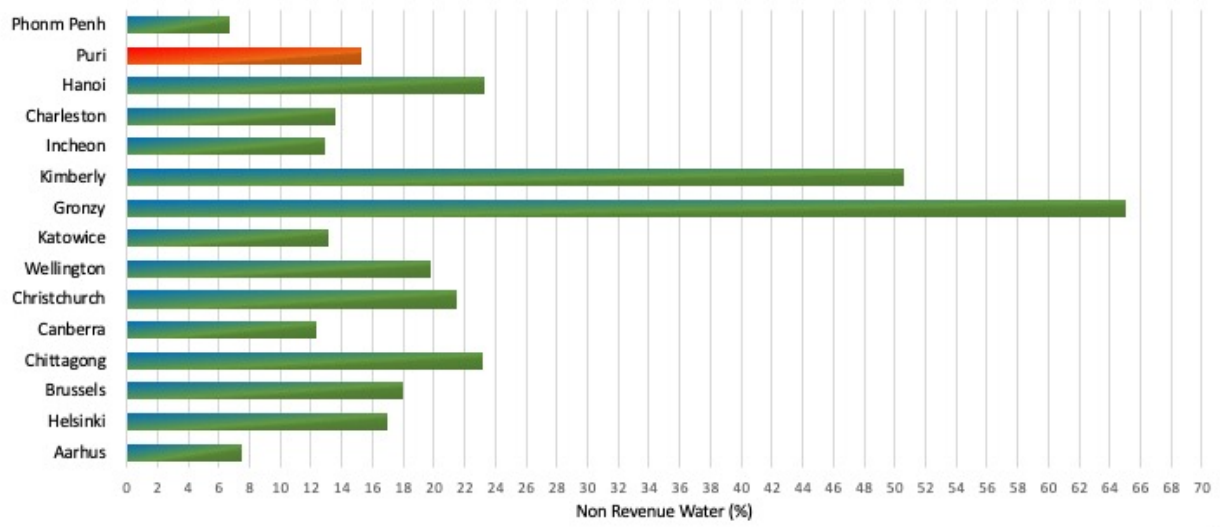
SYSTEM EFFICIENCY

"Comparison" and "Contrast" with similar sized utilities



SYSTEM EFFICIENCY

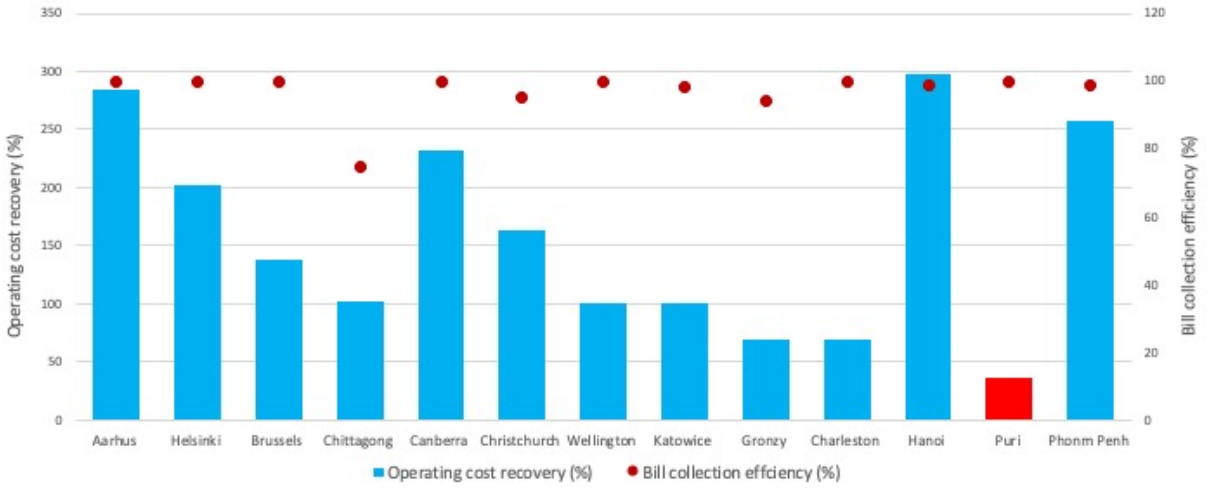
"Comparison" and "Contrast" with similar sized utilities



9

SYSTEM EFFICIENCY

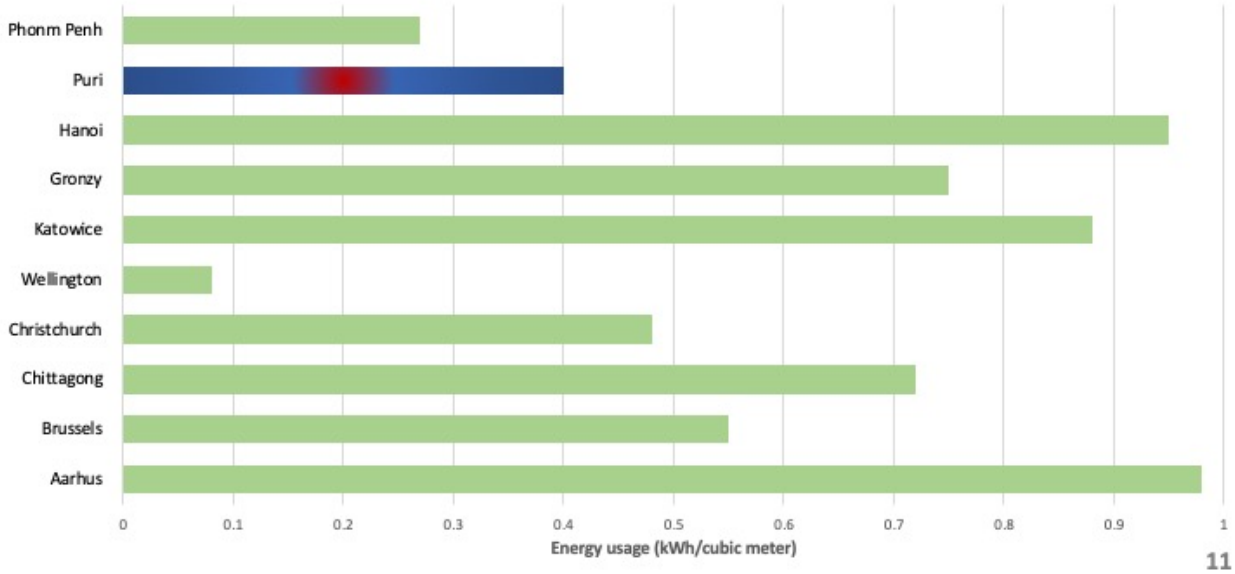
"Comparison" and "Contrast" with similar sized utilities



10

SYSTEM EFFICIENCY

"Comparison" and "Contrast" with similar sized utilities



11

CONSUMER PERCEPTION

Questionnaire Survey

- Separate questionnaire surveys were designed for **slum** and **non-slum** households to capture both points of view.
- The sample size for the survey was established based on a **confidence interval** of 95% and a **margin of error** of 4%.

  Sample size 800 in each city
- More surveys were carried out in **slum households** because they will benefit more from the DFT schemes.

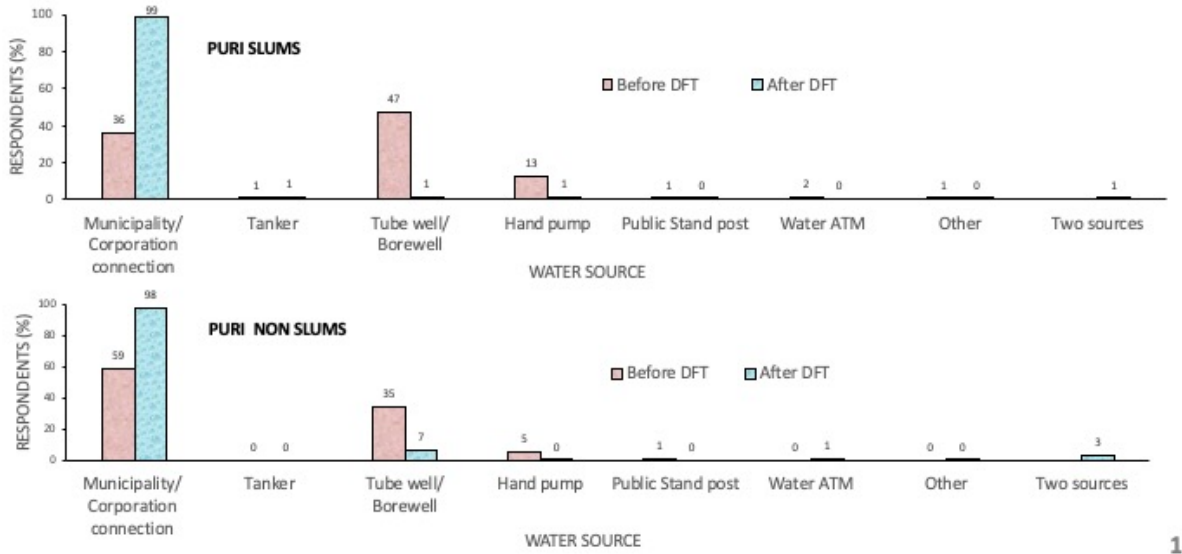
  500: 300 (Slum: Non Slum)

12

CONSUMER PERCEPTION

Evaluation of "before" and "after" situation

What was/is the source of water for members of your household?

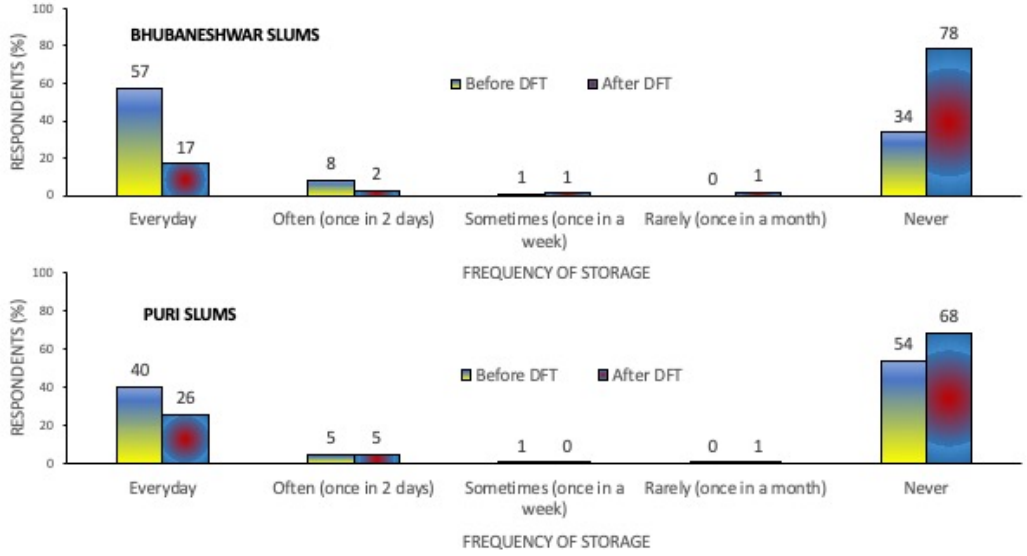


13

CONSUMER PERCEPTION

Evaluation of "before" and "after" situation

How frequently did you store water before and after DFT supply?



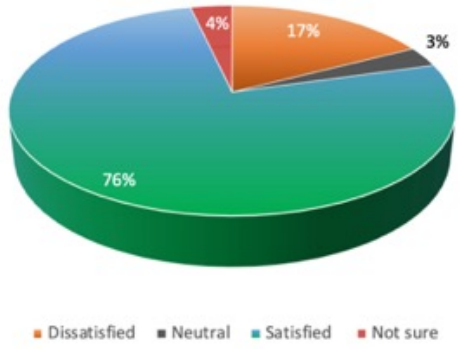
14

CONSUMER PERCEPTION

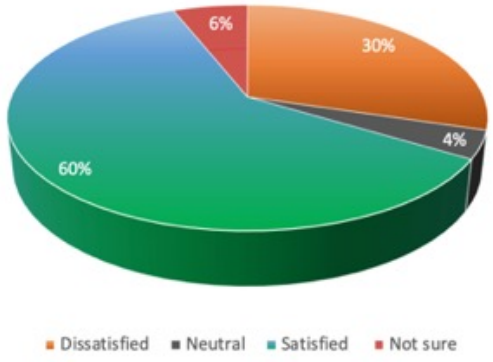
Evaluation of the "satisfaction" quotient

How satisfied are you with the quality of water supplied to your household?

BHUBANESHWAR SLUMS



PURI SLUMS



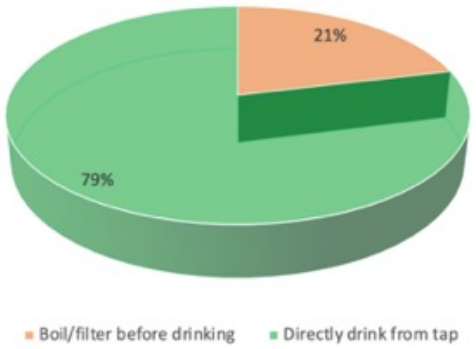
15

CONSUMER PERCEPTION

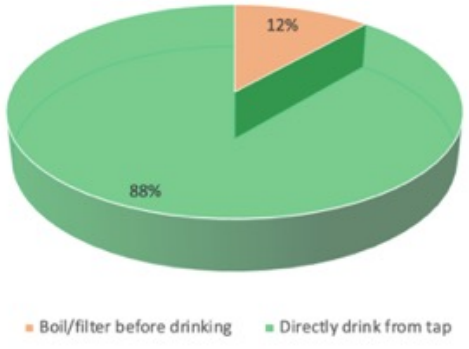
Evaluation of the "satisfaction" quotient

Do you still treat water before drinking?

BHUBANESHWAR SLUMS



PURI SLUMS

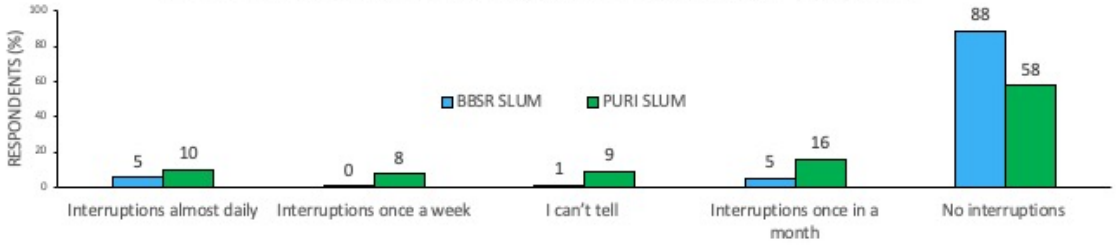


16

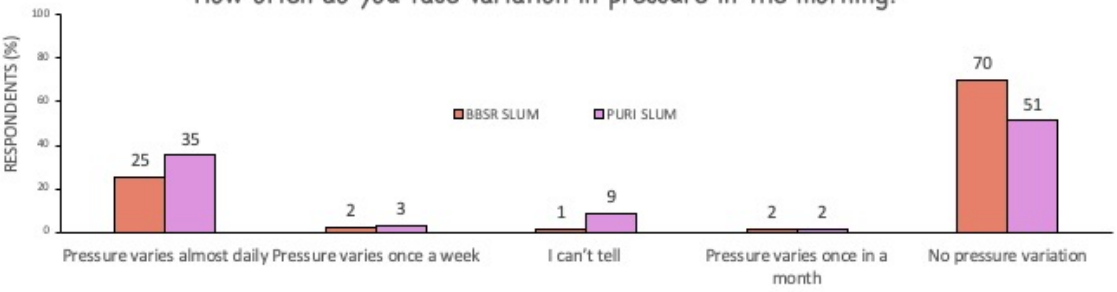
CONSUMER PERCEPTION

Evaluation of the "satisfaction" quotient

How often do you face interruptions in water supply presently?



How often do you face variation in pressure in the morning?

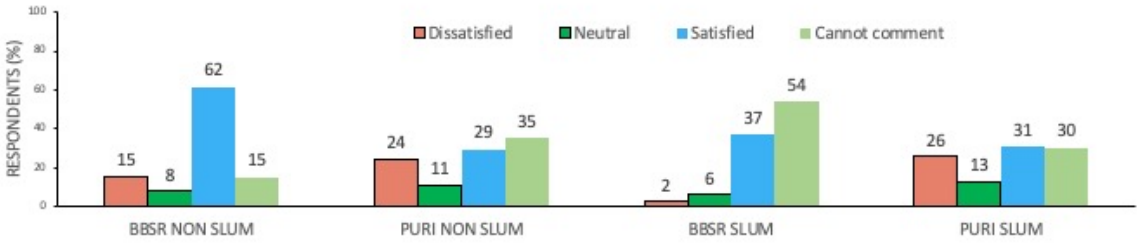


17

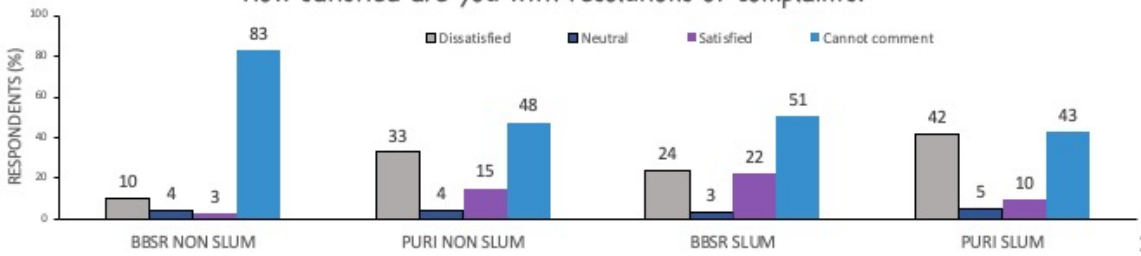
CONSUMER PERCEPTION

Evaluation of the "satisfaction" quotient

How satisfied are you with the price of water?



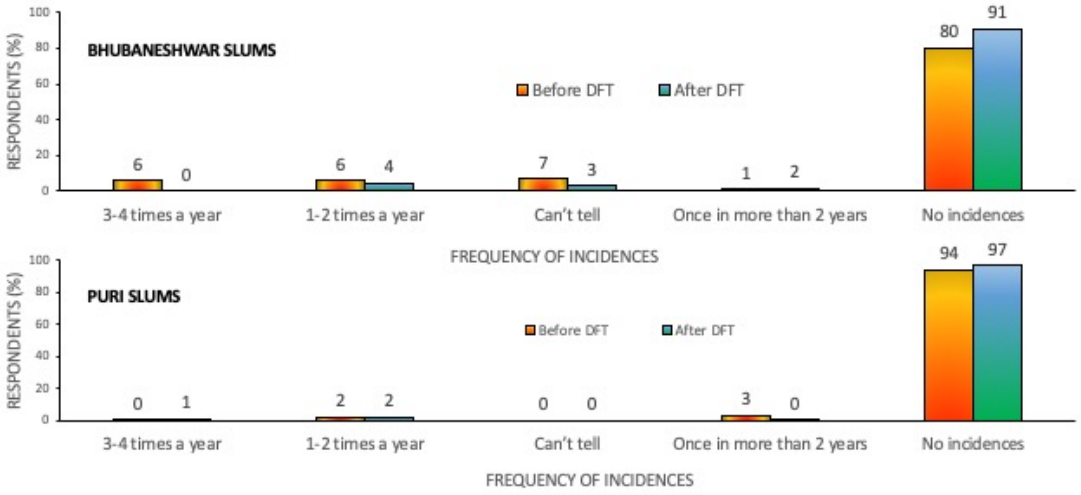
How satisfied are you with resolutions of complaints?



18

CONSUMER PERCEPTION — Evaluation of the "socio-economic" impacts

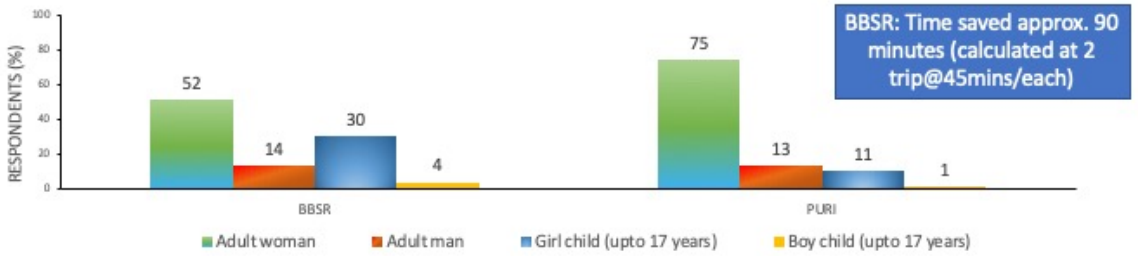
What was the frequency of diseases (Diarrhea/Dysentery, Typhoid, Jaundice, Cholera) caused by consuming contaminated water that affected your family **before** and **after** the DFT scheme?



19

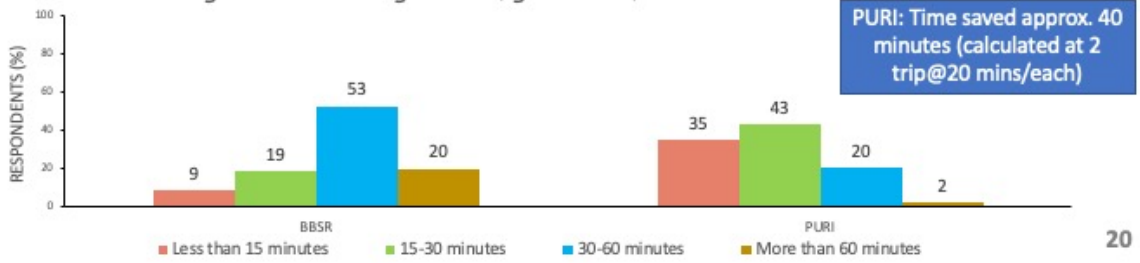
CONSUMER PERCEPTION — Evaluation of the "socio-economic" impacts

Before DFT, which member used to go to fetch water for your household?



BBSR: Time saved approx. 90 minutes (calculated at 2 trip@45mins/each)

How long did it take to go there, get water, and come back?



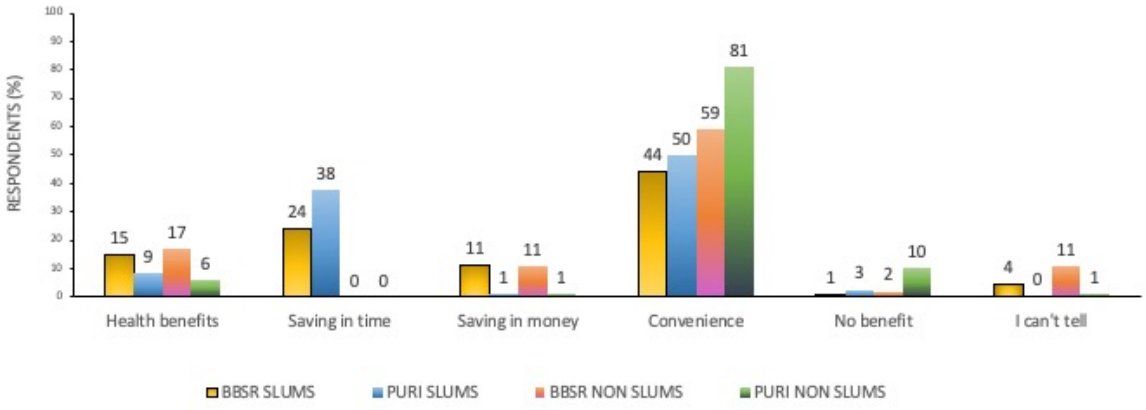
PURI: Time saved approx. 40 minutes (calculated at 2 trip@20 mins/each)

20

CONSUMER PERCEPTION

Evaluation of the "socio-economic" impacts

How has the DFT scheme benefited you?



21

SUSTAINABILITY

Research on why many 24x7 schemes have failed in India and abroad?

- ❑ Low financial viability
- ❑ Aged infrastructure
- ❑ Lack of public acceptance (non-willingness to pay increased fees)
- ❑ Lack of knowledge transfer within the organization
- ❑ Employee dissatisfaction

Approach followed

Focused Group Discussions with

Operators | Jal Saathis | Assistant Managers | Managers

What are the challenges you find in your work?

What kind of support do you require to help you perform your job better?

22

RECOMMENDATIONS

Emerging from the evaluation

Organize periodic capacity building courses (and refresher courses) for staff

Managers	Assistant Managers	Operators	Jal Saathis
○ Smart metering ○ Hydraulic design and network modelling ○ NRW reduction	○ Electric component of the system ○ Understanding of the automated software	○ Electrical fitting ○ Motor related work ○ Valve operations	○ Developing interpersonal skills
○ Financial management	○ Relieving work-related stress		
	○ Safety procedures and practices		

23

RECOMMENDATIONS

Emerging from the evaluation

Sustained and extensive IEC Campaign required to connect better with residents

- ❑ Content
  - ✓ Awareness of the DFT system
  - ✓ Quality assurance
  - ✓ Grievance redressal
- ❑ Strategies
  - ✓ Separate for slum and non-slum
  - ✓ Piggybacking on existing mechanism (e.g. solid waste collection vehicles)
  - ✓ Two way campaigns (invite residents to be part of the campaign)

24

RECOMMENDATIONS

Emerging from the evaluation

Measures to enhance operational robustness

- Dynamic leadership was key for the initial phase of the Mission. Policies and procedures should be put in place to ensure long-term sustainability.
- In Bhubaneshwar and rest of Odisha, it will be useful to set up a city-wide mechanism to coordinate excavation activities by various service providing agencies (electricity, gas, drains, sewer lines, etc.)
- Consider establishing a system (if required paid) to inspect and certify the quality of water in sumps/overhead tanks in non slum households.
- Commission a study to explore different avenues for cost recovery

25

RECOMMENDATIONS

Emerging from the evaluation

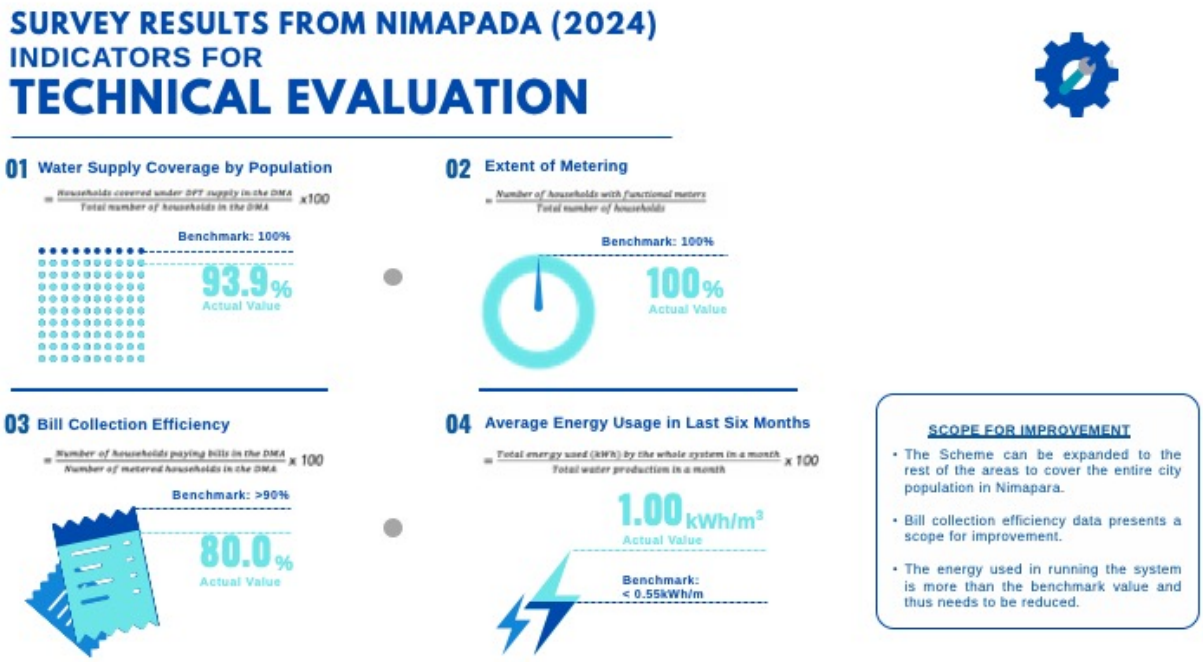
Take measures to enhance employee productivity and satisfaction

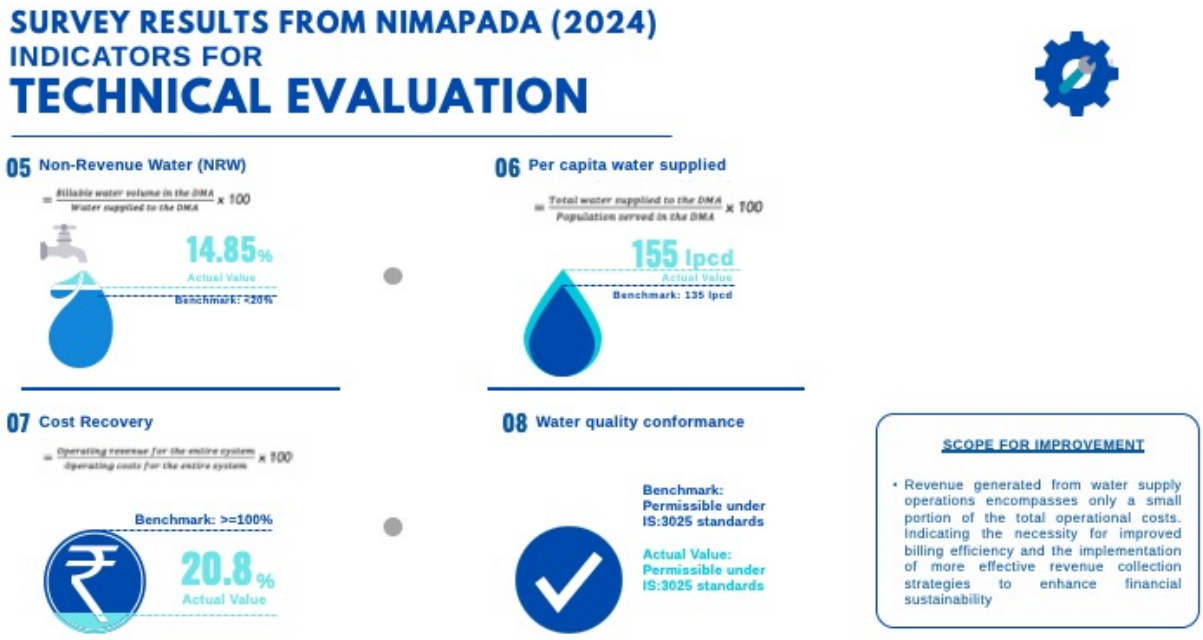
- Fill out vacant positions on a priority basis (especially Manager and Assistant Manager)
- Insurance for workers (especially operators) involved in risky work
- Set up an internal panel to discuss revision of salary and commission rates as well as other benefits for operators and Jal Saathis, respectively.
- Introduce multiple avenues for customers to make bill payments to Jal Saathis (cash, card, UPIs, etc.)

26

Annexure 5

Pilot Testing of the Rapid Assessment Framework in Nimapara (2024)





SURVEY RESULTS FROM NIMAPADA (2024)
INDICATORS FOR
OPERATION & MAINTENANCE (QUANTITATIVE)

01 Staff Strength (Full Time Employee)

$$= \frac{\text{Total number of staff personnel}}{\text{Total number of connections}} \times 1000$$

5.0 no.
Actual Value

Benchmark: 4 no.

02 Service Complaints per 1000 connections

$$= \frac{\text{Number of complaints of quality of service during the assessment period} \times \frac{\text{Unit}}{\text{Assessment Period}}}{\text{Number of service connections}} \times 1000$$

70/year
Actual Value

Benchmark: 20/year

03 Number of training days per FTE per year

Benchmark: 5 days

0 days
Actual Value

SCOPE FOR IMPROVEMENT

- The number of complaints regarding quality of service is way higher than the benchmark value. This shows scope of improvement in service delivery.

SURVEY RESULTS FROM NIMAPADA (2024)
INDICATORS FOR
OPERATION & MAINTENANCE (QUANTITATIVE)

04 Efficiency in Redressal of Complaints

$$= \frac{\text{Total number of complaints redressed within the month}}{\text{Total number of water supply related complaints received per month}} \times 100$$

100%
Actual Value

Benchmark: 80%

05 Days with planned water disruptions

$$= \frac{\text{Number of days with water disruptions}}{365} \times 100$$

Benchmark: 0 days

SURVEY RESULTS FROM NIMAPADA (2024)
INDICATORS FOR
OPERATION & MAINTENANCE (QUALITATIVE)

01 How reliable is the source of water used to meet the city's water demand through the DFT Mission

02 How effective is the Jal Saathis initiative to improve community engagement and awareness regarding water conservation and management?

03 How would you rate the current staffing levels and organizational structure at WATCO for successfully carrying out the Drink from Tap (DFT) Mission and managing water supply operations?

04 How effective is the coordination between WATCO and other relevant government departments (e.g., electricity dept, roads etc.) during the implementation as well as O&M phase for the DFT Mission?

CHALLENGES FACED BY MANAGERS

- The limited effectiveness of the Jal Saathis initiative presents an opportunity to engage more number of Jal Saathis, enabling them to more consistently reach and serve the entire population in the city.
- Inadequate staffing levels leads to occasional delays in service delivery.

SURVEY RESULTS FROM NIMAPADA (2024)
INDICATORS FOR
OPERATION & MAINTENANCE (QUALITATIVE)

05 Is the workload and stress associated with implementing a 24x7 water supply manageable?

06 Option that best describes the level of data management practiced by WATCO to implement the Drink from Tap Mission?

07 How effective is the advocacy initiatives in communicating the tenets and progress of the DFT to the beneficiaries of the scheme?

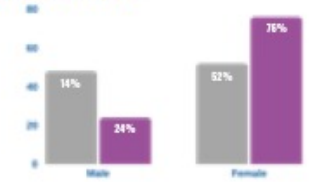
08 How efficient are the administrative and approval processes involved in implementing the Drink for Tap scheme at WATCO Nimapara?

CHALLENGES FACED BY MANAGERS

- The workload and stress associated with implementing a 24x7 water supply is unmanageable due to inadequate staff and more demand.
- There are opportunities to improve the advocacy initiatives in communicating the tenets and progress of the DFT to the beneficiaries of the scheme. This will help in reaching a broader scale of consumers.
- The administrative and approval processes involved in implementing the DFT scheme at WATCO Nimapara are highly inefficient as it involves multiple stakeholders, making the implementation process slower than expected.

SURVEY RESULTS FROM NIMAPADA (2024)
GENERAL ANALYSIS FROM
CONSUMER PERCEPTION

01 Survey Groups



02 Age Groups

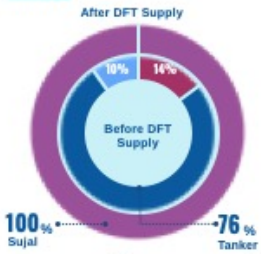

Source: National Institute of Urban Affairs, 2024

- **Most respondents were female, with 52% in non-slum and 76% in slum households.**
- Respondents predominantly **fell within the 31-45 age group across both slum and non-slum households**, indicating a balanced demographic focus.
- Most respondents reported having a **DFT connection for over 12 months**, though some **non-slum respondents had newer connections (0-6 months)**, indicating a recent expansion.

SURVEY RESULTS FROM NIMAPADA (2024)
INDICATORS FOR
CONSUMER PERCEPTION

01 Sources of water before and after DFT supply

Slums:

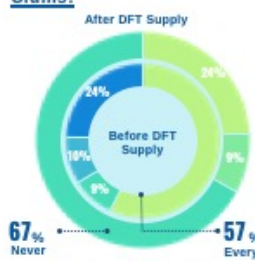


Non-Slums:

- Dependence on external water sources like tankers or groundwater has diminished significantly from 86% to now 0% in slums and from 76% to 0% in non-slums.
- Both **slum and non-slum households are entirely dependent (100%) on DFT water** for their drinking/cooking purposes.

02 Water storage frequency before and after DFT supply

Slums:



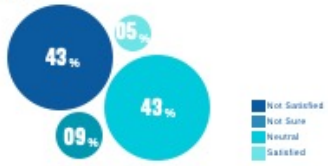
Non-Slums:

- In **slums**, the households never feeling the need to store water increased considerably from 24% to 67% post the DFT supply since **the water is mostly available throughout the day**. Still, 33% slum households store water frequently for times of emergency (in cases of power cuts).
- In **non-slum households**, water is pumped daily to the roof tanks, thus being stored daily. This is because the DFT water si supplied to the already existing underground sumps in most cases.

SURVEY RESULTS FROM NIMAPADA (2024)
INDICATORS FOR
CONSUMER PERCEPTION

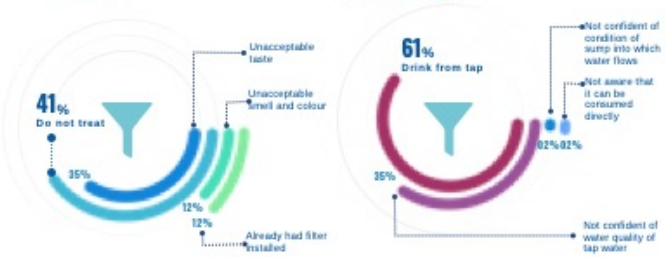
03 Level of Satisfaction with the quality of water in slums

Slums:



04 Reasons for treating water before consuming

Slums: **Non-Slums:**



Slums:

- In **slums**, households are equally (43%) satisfied and dissatisfied with the water quality supplied.
- In slums, the number of people treating the water has reduced significantly from **71% before DFT supply to 48%** post its implementation. They are treating water mostly because of *unacceptable taste, 'muddiness' and 'white coloured insects' observed in water*. A few complained about a strong smell of residual chlorine.

Non-Slums:

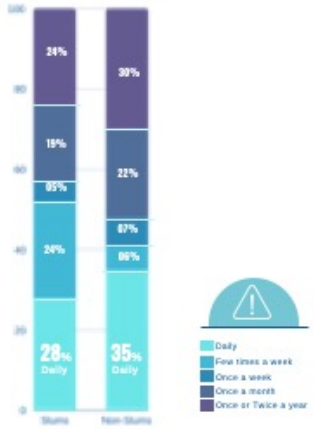
- In **non-slums**, **61% of the people are drinking water directly from the taps**. About 39% of the households are adopting local filtration methods because they were either not confident of the water quality of the tap water or the condition of sump/storage tanks into which the water flows.

RECOMMENDATIONS

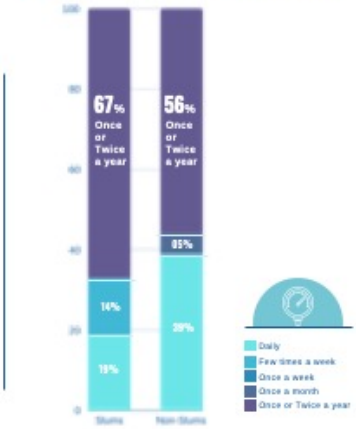
Quality of water supplied in slums requires improvement. In non-slums, adopting community awareness campaigns can help in gaining confidence from the households.

SURVEY RESULTS FROM NIMAPADA (2024)
INDICATORS FOR
CONSUMER PERCEPTION

05 Interruptions in water supply



06 Pressure variation in water supply



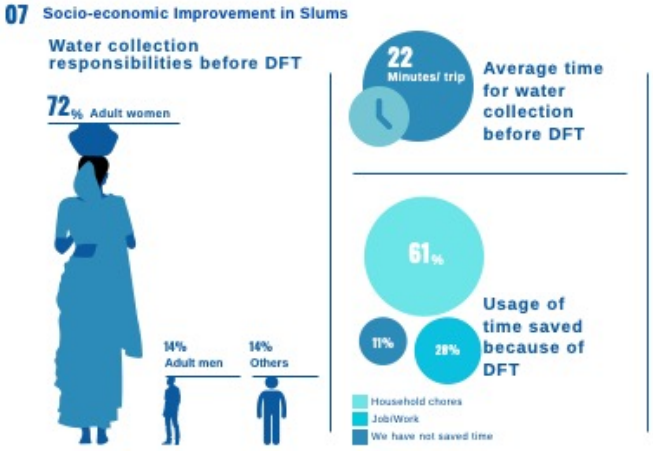
- Both **slums and non-slums reported interruption in water supply almost daily,** indicating that the water supply is **not available '24x7'** to the entire city. Water is supplied with full pressure only during the peak hours, i.e. between 6:30-10:30 AM and 7:00-11:00 PM). It is recommended that WATCO looks into this aspect.
- Majority of the respondents in both slum and non-slum households responded that they observed **no pressure variations** (or once/twice a year) (67% and 56% respectively).
- Daily pressure variations **is less in slum households (19%) than in non-slum areas (39%).**

RECOMMENDATIONS

It is recommended that WATCO Nimapara looks into the interruptions faced in water supply in both slum and non-slum households.

SURVEY RESULTS FROM NIMAPARA (2024)
INDICATORS FOR
CONSUMER PERCEPTION

07 Socio-economic Improvement in Slums



- In **slums**, the responsibility of fetching water predominantly fell on **adult women**, accounting for **72%** of the cases.
- Average time for water collection in Nimapara was approximately **22 minutes per trip.**
- DFT supply system in Nimapara has **contributed to mitigating gender disparity by alleviating the water-fetching duties traditionally assigned to women and girl children.**
- **52.38%** respondents in Nimapara have directed their saved time towards **household chores**.
- **57.14%** of respondents stated that the frequency of diseases was almost negligible.

DRINK FROM TAP ASSESSMENT (NIMAPARA CITY)

Technical Evaluation									
S.No.	Indicators	Benchmark	Score					Score Received	Average Thematic Score
			1	2	3	4	5		
1	Water supply coverage by population	100%	0-24	25-49	50-74	75-99	100	4	3.88
2	Per capita water supplied	135 lpcd	<50	51-79	80-106	107-130	>135	5	
3	Extent of metering	100%	0-24	25-49	50-74	75-99	100	5	
4	Non-revenue water	less than 20%	>50	40-50	30-40	20-30	<20	5	
5	Bill collection efficiency	More than 90%	<30	30-50	50-70	70-90	>90	4	
6	Cost recovery	at least 100%	0-24	25-49	50-74	75-99	100 or >100	5	
7	Energy usage	less than 1.3 kWh/m3	>1.73	1.56-1.73	1.39-1.56	1.22-1.39	<1.22	5	
8	Water quality conformance	100%	0-24	25-49	50-74	75-99	100	5	
Operation and Maintenance - Quantitative									
9	Service complaints per 1000 connections	20/year	>40 or =0	41-80	41-60	21-40	0-20	3	3.25
10	Efficiency in the redressal of customer complaints	80	<20	20-39	40-59	60-79	80 or >80	5	
11	Number of staff personnel available per connection	4/1000 connections	0	1	2	3	4 or >4	3	
12	No. of days of training per FTE per year	5 days/year/person	1 or 0	2	3	4	5	3	
13	Days with planned water disruptions	0	7 or more days	5-6	3-4	1-2	0	3	
Operation and Maintenance - Qualitative									
14	How reliable is the source of water used to meet the city's water		Highly unreliable	Unreliable	Neutral	Reliable	Highly reliable	5	3
15	How would you rate the current staffing levels and organizational		Very inadequate	Inadequate	Neutral	Adequate	Very adequate	3	
16	How manageable is the workload and stress associated with		Highly unmanageable	Unmanageable	Neutral	Manageable	Highly manageable	3	
17	How effective are the advocacy initiatives to communicate the issues		Very Ineffective	Ineffective	Neutral	Effective	Very Effective	3	
18	How effective is the Jal Saathi initiative to improve community		Very Ineffective	Ineffective	Neutral	Effective	Very Effective	3	
19	How effective is the coordination between ULB and other relevant		Very Ineffective	Ineffective	Neutral	Effective	Very Effective	4	
20	Option that best describes the level of data management practiced by		No data collection	Basic amount of data	Data is systematically	Data is collected,	Data is collected,	5	
21	How efficient are the administrative and approval processes involved in		Very inefficient	Inefficient	Neutral	Efficient	Very Efficient	3	

DRINK FROM TAP ASSESSMENT (NIMAPARA CITY)

	Consumer Perception								
13	What is the source of water for members of your household		Non-SUWL	SUWL + 1 other source	SUWL + 1 other source	SUWL + 1 other source	Only SUWL	1	
14	Time saved by household for water fetching after SUWL		No time saved	<15 mins	15-30 mins	30-60 mins	>60 mins	4	
15	Frequency of storing water after SUWL		Everyday	Often (once in 2 days)	Sometimes (once in a week)	Rarely (once in a month)	Never	3	
16	Benefit of the SUWL scheme		No benefit	1 out of 5 benefits	2 out of 5 benefits	3 out of 5 benefits	4 out of 5 benefits	4	
17	Interruptions in water supply		Daily	few times a week	Once a week	Once a month	Once or twice a year	1	
18	Pressure variations in water supply		Daily	few times a week	Once a week	Once a month	Once or twice a year	1	
19	Consistency of the water supply throughout the year		Throughout the year	In summers	Can't tell	During festival days	No variations	1	
20	Satisfaction with the quality of water		Not Satisfied	Not sure	Neutral	Mostly satisfied	Satisfied	5	3.6
21	Reason for treating the water		Unacceptable taste	Unacceptable smell	Not sure of the	Already had filter	Do not treat	1	
22	Frequency of waterborne diseases reduced after SUWL		No change		Can't tell		Yes	4	
23	Water bill generation		Never	Once in 6-12 month	Once in 3-5 month	Once in 2-4 month	Once in a month	2	
24	Satisfaction with the pricing of water		Haven't received bill	Dissatisfied	Don't know the	Neutral	Satisfied	4	
25	Complain related to SUWL water service since the provision of services		Don't know how to	more than 6 times	4-5 times	2-3 times	Once in a while	4	
26	Satisfaction with the resolution of complaints		Dissatisfied	Don't know how to	Neutral	Mostly satisfied	Satisfied	3	
27	Reason for not consuming SUWL water directly		Not confident of	Not aware it can be	Not confident of the	Not confident of	Already directly	1	

Final Score= Average of each thematic score

$$=\frac{3.88+3.25+3+3.6}{4}$$

=3.43

Annexure 6

Qualitative survey with Managers Sample

		1	2	3	4	5
1.	How reliable is the source of water used to meet the city's water demand through the DFT Mission	Highly Unreliable	Unreliable	Neutral	Reliable	Highly Reliable
2.	How would you rate the current staffing levels and organizational structure at WATCO for successfully carrying out the Drink from Tap (DFT) Mission and managing water supply operations?	Very Inadequate	Inadequate	Neutral	Adequate	Very Adequate
3.	How manageable is the workload and stress associated with implementing a 24x7 water supply?	Highly Unmanageable	Unmanageable	Neutral	Manageable	Highly Manageable
4.	How effective are the advocacy initiatives to communicate the tenets and progress of the DFT to the beneficiaries of the scheme?	Very Ineffective	Ineffective	Neutral	Effective	Highly Effective
5.	How effective is the Jal Saathis initiative to improve community engagement and awareness regarding water conservation and management?	Very Ineffective	Ineffective	Neutral	Effective	Highly Effective
6.	How effective is the coordination between WATCO and other relevant government departments (e.g., electricity dept, roads etc.) during the implementation as well as O&M phase for the Drink from Tap Mission?	Very Ineffective	Ineffective	Neutral	Effective	Highly Effective
7.	Option that best describes the level of data management practiced by WATCO to implement the Drink from Tap Mission?	No data Collection	Basic Data Collection	Collected & Classified	Collected, Classified & Analysed	Collected, Classified & Analysed
8.	How efficient are the administrative and approval processes involved in the implementation of the Drink for Tap scheme?	Very Ineffecient	Ineffecient	Neutral	Effeciant	Very Effecient