



EASE OF SEPTAGE MANAGEMENT

Performance of 56 Towns of Uttar Pradesh





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**Performance of 56
Towns of Uttar Pradesh**

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Executive summary

Uttar Pradesh (UP) is the most populated state in India, and 95 per cent of its cities and towns are completely dependent on non-sewered sanitation systems. Only 31 towns (out of the 734 in the state) have a partial sewerage system and treat just about 40 per cent of the sewage generated, based on a CPCB report (2021).^{*} Therefore, affordable, sustainable and inclusive management of faecal sludge and septage is a priority for UP.

About this report

Uttar Pradesh has progressed remarkably in the last year, with the increasing number of its infrastructure-ready FSSM plants increasing from 4 to 57 out of a total of 59 plants. However, more than 700 cities still remain without any septage management solutions.

While UP was building its non-sewered sanitation infrastructure of faecal sludge treatment plants (FSTPs) in 35 towns and septage–sewage co-treatment plants (in 20 towns) primarily under the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) (2018–22), there was a need felt for initiating a septage management assessment framework and tool to prepare towns for assessing their performance towards septage management.

An Ease of Septage Management (ESM) Tool was developed by the Department of Urban Development (DoUD) of Uttar Pradesh, as a three-star rating tool to incentivize the towns and cities of UP for a friendly competitive ranking of towns and cities to assess their septage management. CSE supported DoUD to come out with the ESM Tool and was tasked to apply it for the first round of ranking in 2023.

What this report shows

This report presents the findings of the ESM Tool, including:

- Progress of cities in non-sewered sanitation (NSS): Identifying how many towns or cities have managed to secure a star rating of one to three stars; and
- Explaining the emerging challenges of septage management in UP.

^{*} Central Pollution Control Board, National Inventory of Sewage Treatment Plants, March 2021, <https://cpcb.nic.in/openpdffile.php?id=UmVwb3J0RmlsZXNvMTIyOF8xNjE1MTk2MzIyX2I1ZGlhcGhvdG85NTY0LnBkZg==> (as viewed in June 2022).

The ESM Star Rating Tool is an **ADVOCACY** tool, for promoting the immediate priorities of septage management in the cities of UP, for assessing the following:

- Functionality of infrastructure (whether it is functional in terms of sludge load received and some other indicators);
- Sustainability (infrastructural and operations of plant); and
- Inclusivity (only a few aspects of inclusion—affordability, gender and workers safety).

There are a total of 34 same-weighted indicators to rank the cities in different “star” categories, and a city can gradually move from one star category to the next one upon satisfying various indicators.

The performance of 56 cities, which have either faecal sludge treatment plants (FSTPs) or co-treatment plants, is assessed on the basis of the indicators of the ESM Tool. City-wise performance can be accessed from the QR code.



What this report is not meant to measure

- **Scoring is for advocacy** of larger aims and for prioritizing actions on the ground. Scoring should not be used for only statistical analysis.
- **Scores are not to be averaged** or read as representing independent variables.

Scoring is not for coming out with Citywide Inclusive Sanitation (CWIS) city ranking. Only a few practical elements of CWIS framework are included to serve the current on-ground inclusive faecal sludge management (FSM) aims in UP.

The tool assesses and assists in systems-level improvements needed for:

- FSTP or co-treatment plant construction and **infrastructure**;
- FSTP or co-treatment plant is **operational** and in working condition; and
- **Enabling institutional mechanisms** in place.

Key findings and recommendations

Scale up of septage management in UP now covers 56 towns in the state. There are currently 59 septage treatment plants i (39 FSTPs and 20 STP co-treatment plants) in UP.

During the last one year, significant progress has been made, with a total of 57 plants now infrastructure-ready compared to just 19 in June 2022. Therefore, as the cities are becoming increasingly infra-ready, they are now facing a new set of challenges in delivering sanitation services to the citizens. The Ease of Septage Management (ESM) Tool provides scope to assess the performance of the cities in providing Citywide Inclusive Sanitation (CWIS) for all.

A. Infrastructure

All the 56 towns have declared themselves as Open-Defecation Free (ODF) and that the majority of the community and public toilets are functional and clean.

We moved straight towards understanding the functionality of the FSTP and co-treatment infrastructure for septage management, which in most instances has been completed only a few months before this first Star Rating Assessment.

The current status of FSTP and co-treatment infrastructure for septage management is:

- i) 57 FSSM plants (95 per cent) are now ready for treating faecal sludge, ensuring that 55 cities out of 57 are now capable of treating faecal sludge.
- ii) Approach road to FSTPs is still a major challenge.

Recommendations

The initial success of making FSTPs functional after construction may be jeopardized if the state and city governments do not resolve existing or remaining technical issues of treatment chains of FSTPs and co-treatment facilities.

There are some faulty systems in place that the Centre for Science and Environment (CSE) has identified that need to be rectified.

B. Operations

Treatment plants in 20 cities (36 per cent) meet standards laid down by the Central Pollution Control Board (CPCB) for treated wastewater. While test reports show compliance with the SPCB/CPCB standards, visual inspection of effluent during the field visits did not concur with the reports in many of the plants. Many of the cities have not yet tested for quality of effluent at their treatment plants. In order to ensure reliability of the test results, therefore, the cities should ensure that testing of treated biosolids and wastewater takes place only from National Accreditation Board for Testing and Calibration Laboratories (NABL)-accredited laboratories.

Successful operations of FSTPs are dependent on a minimum level of regular sludge load coming to the FSTPs. In theory, an FSTP that is underutilized may work more efficiently given that most FSTPs are nature-based and hybrid systems. However severe under capacity—less than 20 per cent sludge load as compared to installed capacity of FSTPs (most are 32 KLD)—may result in breakdown of valves, choking of pipes, malfunction of pumps, death of microbes and breakdown of biological treatment.

Only eight cities out of 56 receive 20 per cent sludge (against installed capacity) at the treatment facility. This is a major cause of concern for sustainable operations of FSTPs in UP. The current low quantity sludge reaching treatment plants may make it seem as if there are sufficient desludging vehicles in the cities and low desludging demand or sufficient desludging demand but poor monitoring and enforcement. Hence, there is a need to examine what ails desludging and sludge reception at plants in UP towns and what needs to be done to improve it.

Recommendations

- i. As an immediate first step, cities should prioritize institutional desludging on a schedule basis, i.e. regular cleaning of septic tanks of the community toilets (CTs), public toilets (PTs), Awas colonies and other government institutions to ensure regular sludge to the plants.
2. Cities need to identify, register and license all private desludgers operating in the city. Only 14 cities (25 per cent) have currently registered all private desludgers operating in the cities. To attract operators to register, cities can incentivize them through social recognition, cash incentives, low registration fees etc.
3. Registration and licensing of private operators can result in better monitoring and regulations related to indiscriminate dumping of faecal sludge. Currently, only 23 cities (41 per cent) monitor and penalize desludging operators to ensure that they do not discharge sludge in non-designated areas.
4. The state should come up with a guideline on Standard Operating Procedures (SOPs) for cities for the O&M of FSTPs and co-treatment plants.
5. Only 10 cities (18 per cent) either safely store or reuse 100 per cent of treated water and treated biosolids at the treatment facility. The state should formulate and issue a guideline for reuse of treated water and biosolids.

C. Enabling institutional mechanisms

The FSTPs have been completed and handed over to Urban Local Bodies (ULBs) only recently. Enabling mechanisms to ensure sustainable and inclusive operations are therefore yet to be in place in most towns.

1. Only 21 cities have taken over the FSSM plants from the UP Jal Nigam (UPJN), the implementing agency. The handover process should be immediately complete and cities need to engage personnel to operate and maintain the plant. The state-issued model request for proposal (RFP) or contract document will help the cities to engage firms for O&M of the plants.
2. Only three cities have a regulatory framework for FSSM in the form of bylaws in place to aid functionality and sustainability of the FSSM infrastructure.
3. ULBs should form functional city-level sanitation committees. Currently, only three cities have city-level committees to exclusively discuss sanitation. For large cities, the city-level committees need to have further block level sanitation committees.

Recommendations

Sustainability of the plant operations of an FSTP or co-treatment depends on the budget allocation by towns and a state policy that allows towns to allocate Finance Commission (Central and state) grants or own fund for the O&M. Currently, only five cities recognize O&M of FSTPs and co-treatment plants as an expenditure line item in the regular ULB annual list of expenses.

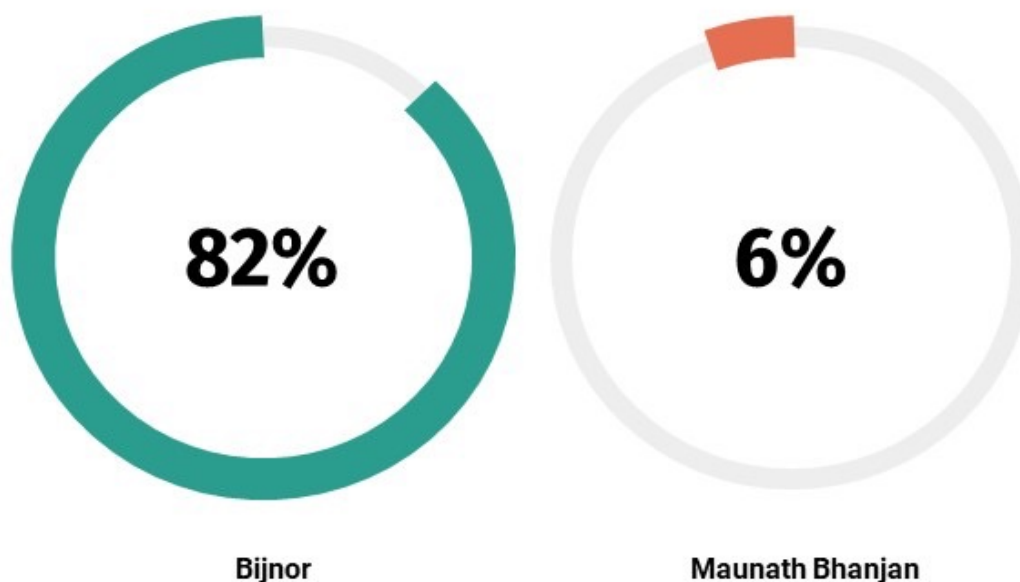
Proper recognition of the efforts of sanitation workers is still superficial in many of the cities. Genuine recognition of the sanitation workers should be done by providing better working conditions, linkage with government health schemes and relevant skill upgrading trainings.

Key highlights

1. Star cities

- a. There are seven one-star cities: Aligarh, Bijnor, Chunar, Jhansi, Hapur, Loni and Shamli.

★	★★	★★★
Aligarh Bijnor Chunar Jhansi Hapur Loni Shamli	None qualified	None qualified

Figure 1: Compliance for Bijnor and Maunath Bhanjan

Bijnor and Maunath Bhanjan were the most (with 27 out of 34 indicators) and least (with two out of 34 indicators) compliant cities respectively.

2. Indicator-wise the best three areas of performance by the cities

- All the towns are ODF (100 per cent cities). Self-reported only.
- No discrimination in salary and wages of sanitation workers based on gender (100 per cent of the cities).
- Treatment infrastructure exists for sludge generated in the city in the form of either FSTP or co-STP (96 per cent of the cities).

3. Indicator-wise worst three areas of performance by the cities

- All CT/PTs are women-, disabled- and child-friendly (0 per cent cities).
- Masons and self-help groups (SHGs) in the city are provided training on the construction of standardized septic tanks and O&M of the treatment facility by the ULB once a year (0 per cent of the cities).
- The treatment facility runs at 40 per cent of its maximum capacity in the last month (2 per cent of the cities).

Background

The state of septage management

In 2022, there were a total of 62 plants, 40 FSTPs and 22 STP-co-treatment plants across 59 cities of Uttar Pradesh. Recently, Uttar Pradesh Jal Nigam (UPJN) has removed one FSTP (Pandit Deen Dayal Upadhyaya [PDDU] Nagar) and two co-treatment plants (Ballia and Ghazipur). Therefore, currently, there are 59 plants, with 39 FSTPs and 20 STP co-treatment plants in 56 cities. Jhansi has three FSTPs and Ayodhya has both FSTP and STP co-treatment plants.

During the last one year, significant progress has been made, with a total of 57 plants now infrastructure-ready compared to just 19 in June 2022. Therefore, as the cities are becoming increasingly infra-ready, they now face a new set of challenges in delivering sanitation services to citizens. The Ease of Septage Management (ESM) Tool provides scope to assess the performance of the cities in providing Citywide Inclusive Sanitation (CWIS) for all.

Ease of Septage Management Tool

On World Water Day, March 22, 2023, the Department of Urban Development, Uttar Pradesh, published the Ease of Septage Management (ESM) Tool to objectively assess the performance of the cities and thus support them to attain functional, sustainable and inclusive sanitation services for all. The tool has a total of 34 indicators related to three aspects for providing septage management services—infrastructure creation, operationalization of the infrastructure and strengthening institution. The gaps in achieving progress against the indicators help cities to identify actions to be taken to attain higher standards of services.

The tool covers three functional areas, including:

A. Infrastructural provision

- Containment systems: Access to safe sanitation—individual household toilets, community and public toilets and off-site treatment facilities; and
- Existence of functional septage treatment infrastructure: Faecal sludge treatment plants and co-treatment infrastructure in existing STPs.

B. Operational efficacy

- O&M of treatment plants (sewage septage co-treatment plants and FSTPs); and
- Regular desludging services are available and delivered to all residents (ensuring inclusion of services to the marginal and poor households).

C. Institutional (urban local body institutional) effectiveness

- Management of septage treatment operations; and
- Governance of sanitation systems—for safety, equity and justice.

In Uttar Pradesh, 56 cities now have septage management plants (two plants in two cities are under construction), implying that the cities are moving beyond infrastructure creation to have functional infrastructure and provision of sustainable and inclusive sanitation services. The ESM Tool is therefore implemented in these 56 cities.

Methodology

This report is the result of visits by the CSE team in July 2023–August 2023 to 56 cities with FSSM plants either already constructed or under construction. During these visits, the CSE team visited the offices of the urban local bodies and project sites, and held multi-stakeholder discussions to understand the sanitation services being provided to citizens by the ULBs.

1. Data collection checklist

The ESM Tool, with 34 indicators, is used to assess the sanitation status of the cities. The tool covers three areas or functions, namely infrastructure, operation and institution; and assesses the performance of these three areas. There are a total of 34 indicators all with the same weightage. The performance of a city against these 34 indicators leads to the ranking of the cities in three different “star” categories.

Table 1: Star categories

Star category	Thematic areas	Number of indicators	Total number of indicators
One star (*)	Infrastructural	3	8
	Operational	3	
	Institutional	2	
Two star (**)	Infrastructural	2	13
	Operational	5	
	Institutional	6	
Three star (***)	Infrastructural	4	13
	Operational	4	
	Institutional	5	

Significance and eligibility of star categories

Table 2: Significance and eligibility of star categories

Star category	Significance	Eligibility
One star (*)	The city has basic functional septage management infrastructure and institutional mechanism.	A city has to score against all eight indicators under the one-star category.
Two star (**)	The city has functional and sustainable septage management infrastructure and institutional mechanism.	A city has to score against all 13 indicators under the two-star category in addition to scoring against all indicators under one-star category.
Three star (***)	The city has the highest level of functional, sustainable and inclusive septage management infrastructure and institutional mechanism.	A city has to score against all 13 indicators under the three-star category in addition to scoring against all indicators under the one-star and two-star categories.

2. Visit to the cities and project sites

In the cities, the team visited the FSSM project sites, community toilets (CTs) and public toilets (PTs), government Awas Yojanas and random places to gain first-hand experience of the status of city-sanitation services.

3. Discussion with officials

The team held discussions with key stakeholders, including the Executive Officer of the relevant urban local body (ULB), the District Project Manager (DPM) and the District Coordinator (DC) of the Swachh Bharat Mission (SBM) programme, engineers from the Uttar Pradesh Jal Nigam (UPJN), representatives of the private contractor working on the project, and local private desludgers and citizens to understand the current status of progress against the indicators.

4. Review of documents

The team reviewed and collected various documents as evidence to the claim made by the ULBs against certain indicators like fines collected from private desludgers for inappropriate handling of faecal sludge, requests for desludging services received from citizens, etc.

5. Analysis of data

The collected data is digitized and analysed. The performance of the cities against various indicators, system improvement areas and ranking are done using spreadsheet analysis.

Figure 2: Process flow used for developing this report



Performance of Uttar Pradesh

1. Indicator-wise performance of cities

Out of all the indicators, all the ULBs achieved one indicator (the towns were Open Defecation Free (ODF) and no ULB scored against two indicators (a. “CT/PTs are women-, disabled- and child-friendly”, and b. “Masons/SHGs in the city are provided training on construction of standardized septic tanks/O&M of treatment facility by the ULB once a year”). There are four indicators that are satisfied by more than 90 per cent of the cities. Similarly, less than 10 per cent cities achieved nine indicators.

2. Infrastructure

Toilet

All 56 cities (100 per cent) are ODF (self-reporting, not verified) and 46 cities (82 per cent) have functional and clean community toilets (CTs)/public toilets (PTs) (self-reported, not verified). No city has all the CTs/PTs and is women-, children- and disabled-friendly. All the cities failed to conduct mason training.

Figure 3: Indicator-wise performance of ULBs

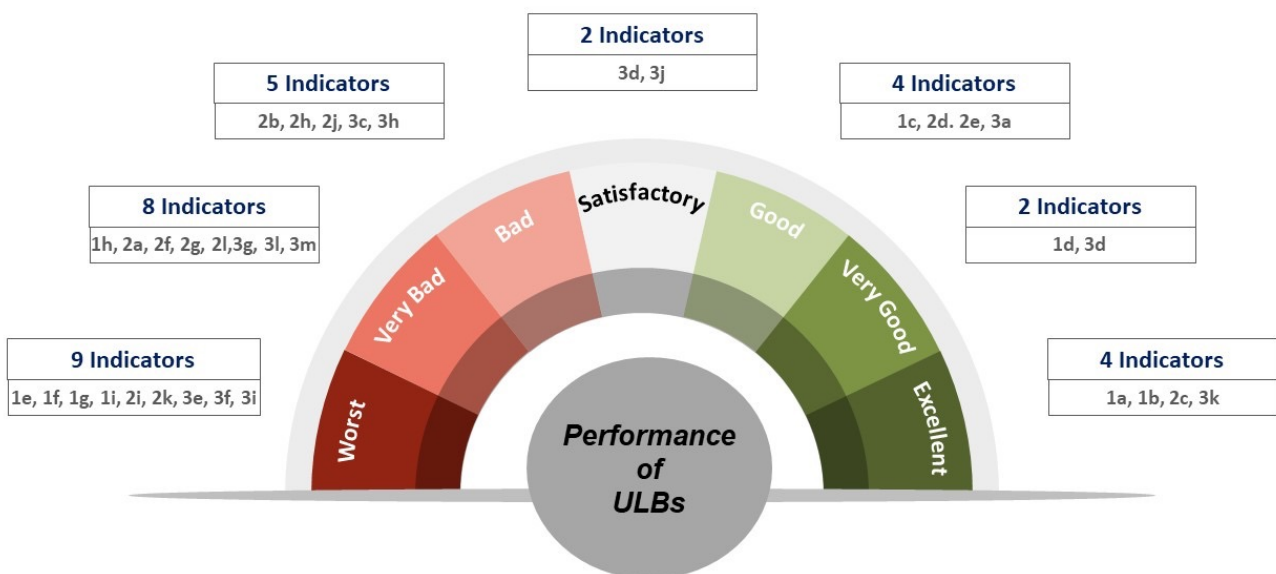
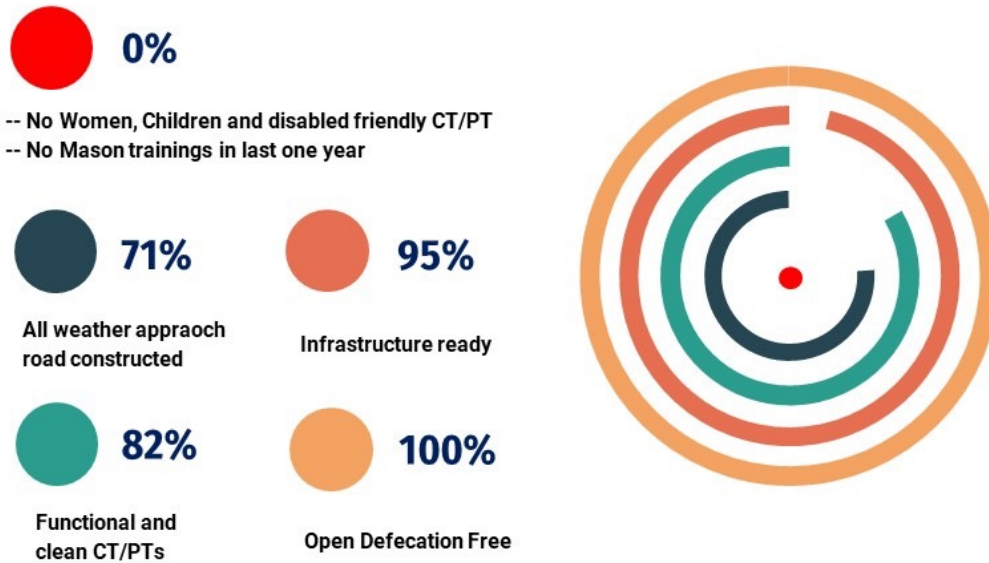
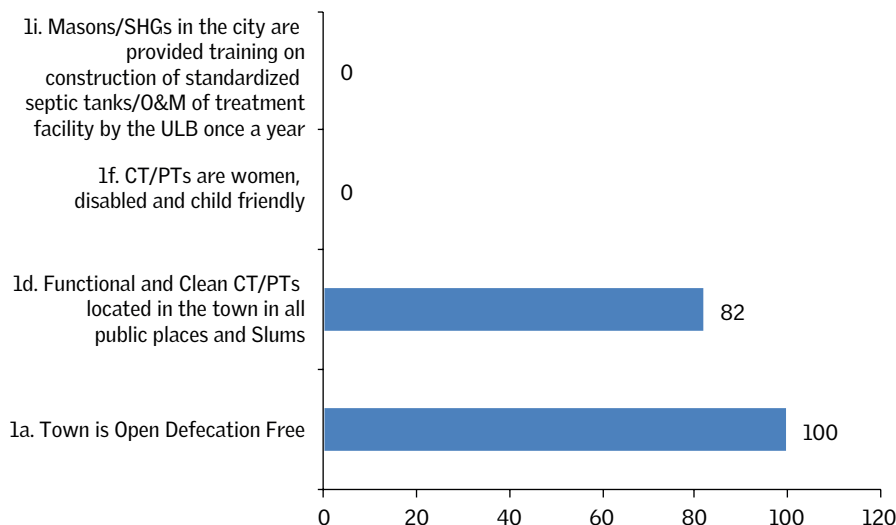


Figure 4: Percentage of cities achieved various indicators related to infrastructure



A community toilet (CT)

Figure 5: Percentage of cities that achieved various indicators related to toilets



FSSM infrastructure

As of July 2023, 37 FSTPs out of the 39 were fully constructed and all 20 co-treatment plants were physically completed. Therefore, 57 out of 59 FSSM plants (95 per cent) are now infrastructure-ready and capable of treating sludge. Forty cities (71 per cent) completed construction of the approach road usable across weathers.

3. Operation and maintenance

Utilization of plant capacity and reuse of treated biosolids and treated wastewater

Performance of cities in utilization of plant capacity and reuse of treated water and biosolids is poor. Forty-eight (48) cities (86 per cent) failed to have at least 20 per cent utilization of the plant capacity. Only one city utilized more than 90 per cent of the plant capacity (Chunar). Only 10 cities (18 per cent) ensured that 100 per cent of treated water and treated biosolids at the treatment facility is reused or safely stored.

It should be noted, however, that most of the plants are just starting their operations and urban local bodies (ULBs) are taking charge of the infrastructure. Many of the cities have not yet tested for quality of effluent at their treatment plants and in only 20 cities (36 per cent), the plants meet the CPCB standard for treated wastewater.



Co-treatment plant in Bulandshahr



Co-treatment facility in Ayodhya

Figure 6: Percentage of cities that achieved various indicators related to FSSM plants

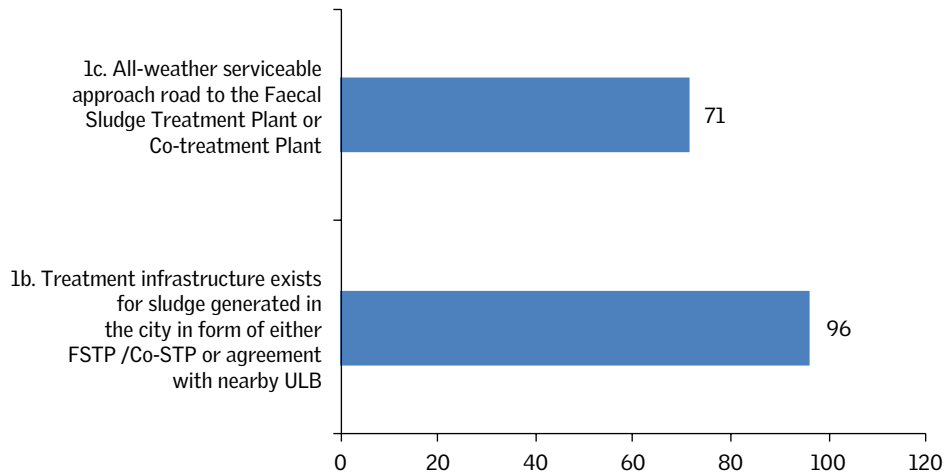


Figure 7: Percentage of cities that achieved various indicators related to O&M

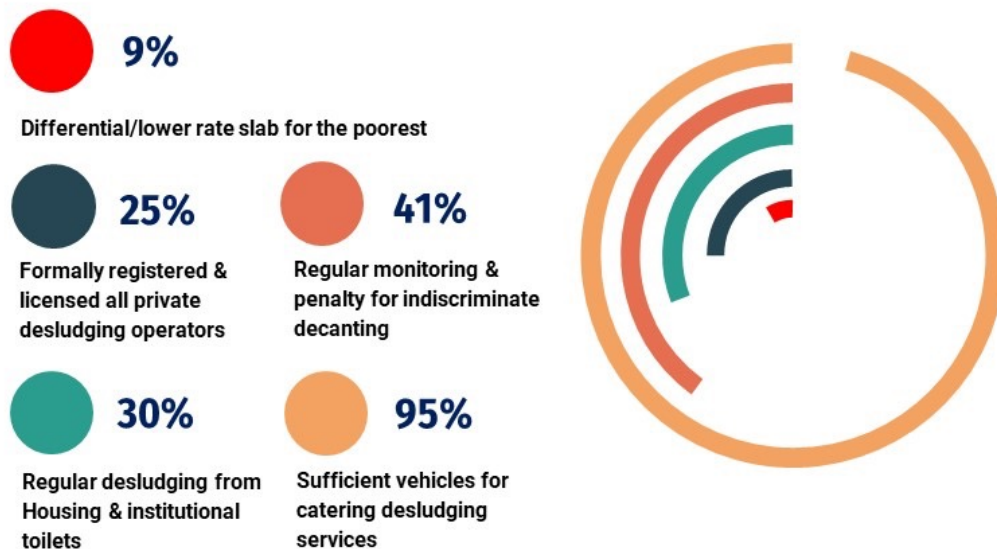


Figure 8: Percentage of cities against performance in operation and maintenance (O&M) of FSM infrastructure

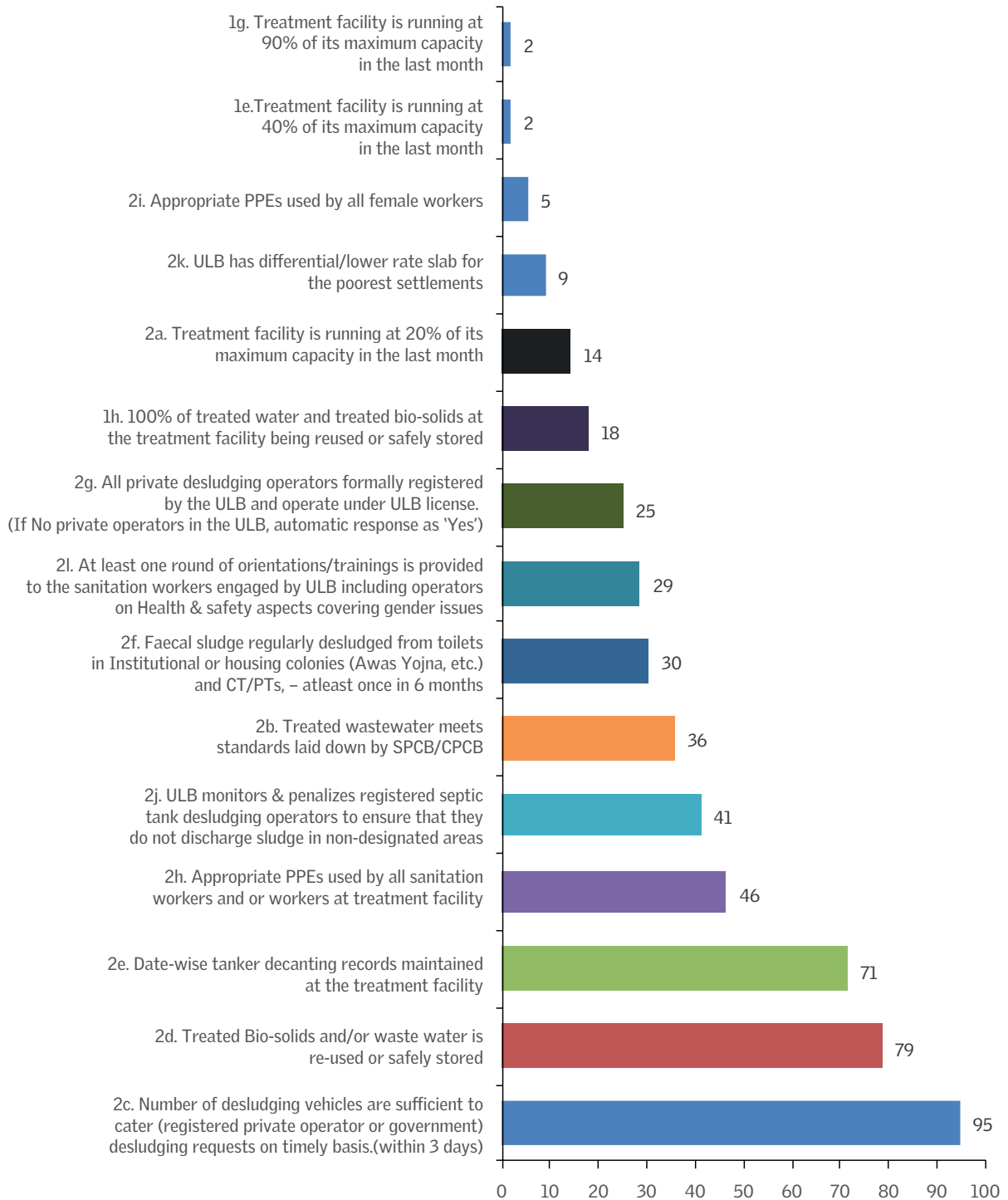
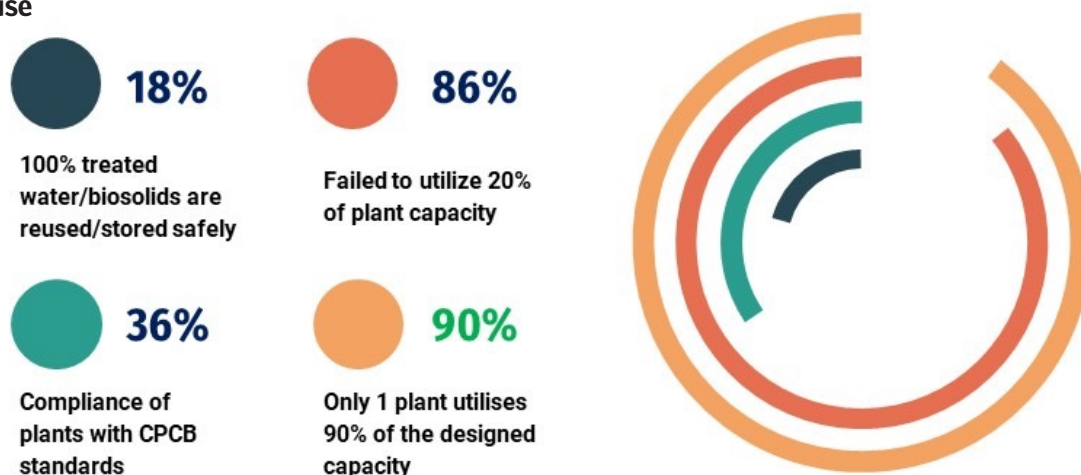


Figure 9: Percentage of cities that achieved various indicators related to utilization and reuse



The cities need to maintain the plants properly and get the tests done from an NABL-accredited laboratory. It is, however, important to note that the majority of the cities have been handed over to an Urban Local Body (ULB) within the last one year.

Desludging services

Fifty-three (53) out of 56 cities (95 per cent) have sufficient desludging vehicles (registered private operators or government vehicles) to cater to desludging requests on a timely basis within three days of receipt of the request. Twenty-three (23) cities (41 per cent) monitor and penalize registered septic tank desludging operators to ensure that they do not discharge sludge in non-designated areas. However, 17 cities (30 per cent) ensure that faecal sludge is regularly desludged from toilets in various institutions or housing colonies (Awas Yojana etc.) and from CT/PTs at least once in six months. Fourteen (14) cities (25 per cent) formally registered all private desludging operators and they operate under a ULB license. Five (5) cities (9 per cent) have differential or lower rate slabs for the poorest settlements.

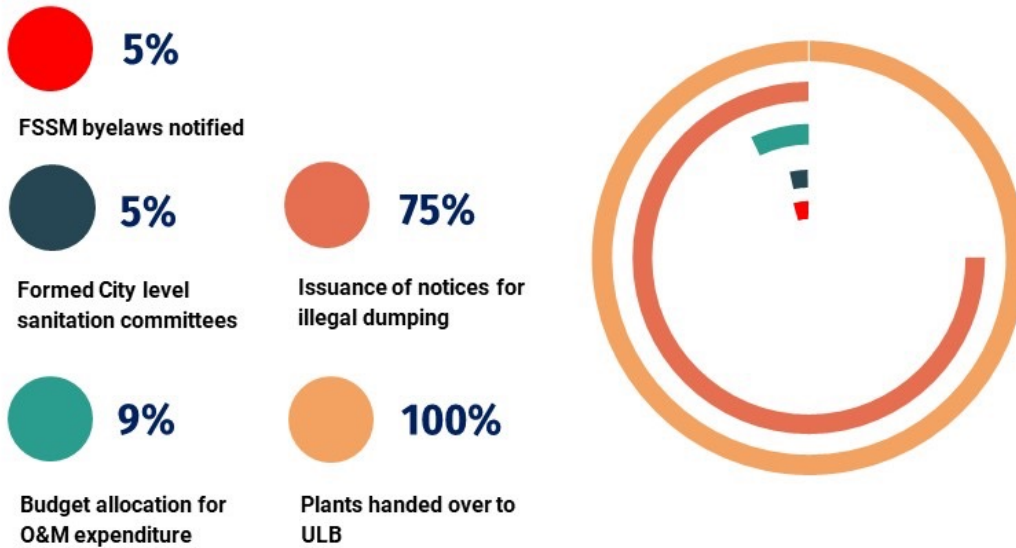


Vacuum tankers of 500- litre capacity



Desludging service of Chunar municipality

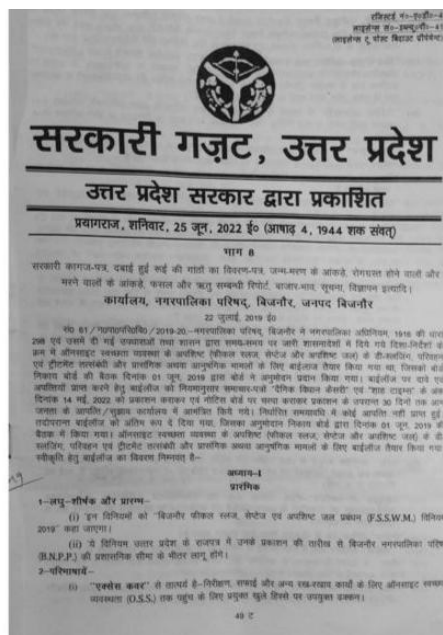
Figure 10: Percentage of cities that achieved various indicators related to institutional issues



4. Institutions

FSSM byelaws and prohibiting indiscriminate dumping of sludge

City-level FSSM byelaws are notified in the gazette in three cities (5 per cent) in UP. However, 42 cities (75 per cent) issued executive orders mentioning penalties for indiscriminate dumping of sludge in places other than the FSSM plants.



FSSM byelaws of Bijnor Nagar Palika Parishad

कार्यालय : नगर पालिका परिषद, खुर्जा (बुलन्दशहर)		
पत्रांक - 923 / स्थापित / 2022-23		दिनांक - 12.09.2022
<p>सर्व साधारण को सूचित किया जाता है कि नगर पालिका परिषद खुर्जा के क्षेत्रान्तर्गत सभी ट्यूब विल पीट सौधारियों को 03 वर्ष में कम से कम एक बार अवश्य धावनी करा ले। ऐसा नहीं करने पर सम्बन्धित व्यक्ति के विरुद्ध दण्डात्मक कार्यवाही की जायेगी। नगर पालिका क्षेत्रान्तर्गत नगर पालिका के डी-स्लजिंग वाहन से अथवा नगर पालिका में रजिस्टर्ड निम्नलिखित सोकपिट संचालकों से ही सोकपिट की सफाई/डी-स्लजिंग का कार्य करवाये।</p>		
क्र.सं.	कार्यदायी पंजीकृत संचालक का विवरण	संचालक का मो. नं०
01	नगर पालिका परिषद, खुर्जा, रजौत	9412436675
<p>विशेष सूचना—उक्त संचालक के द्वारा सफाई के उपरान्त तलज/मलमे का निस्तारण नगर पालिका परिषद, खुर्जा द्वारा निर्धारित एफएचएसटीपी/प्लांट में ही किया जायेगा। उक्त स्थल के अतिरिक्त नादे, नाली व अन्य खुले स्थान पर निस्तारण करने वाले जाने पर नगर पालिका परिषद खुर्जा के कन्ट्रोल रूम नं०-863049770 पर सूचित करने का कष्ट करें।</p>		
<p>अधिसूचना अधिकारी नगर पालिका परिषद खुर्जा</p>		

Notification in a local newspaper for regularly desludging septic tanks every three years

City-level committee and citizen engagement

City sanitation committees are available in three (5 per cent) of the cities. In 12 cities (21 per cent), stakeholder meetings with the contractor and/or private operators take place at least once in six months to review desludging work and or cost escalation. In 36 cities (61 per cent), there is some system—a helpline, annual public hearing, etc.—for citizens to raise sanitation-related requests in the ULB.

Fiscal commitment for FSSM

In five cities (9 per cent), O&M of the FSTPs and co-treatment plant are recognized as an expenditure line item eligible for funding under any scheme or as a regular annual list of expenses of the ULB.

Handing over of the plants to the ULBs

In 21 cities (38 per cent), handover of the treatment facility from the implementing agency to the ULB is done. Cities need to immediately take handover of the plants from UPJN.

Status of the sanitation workers

In 14 cities (25 per cent), all sanitation workers are linked with at least three government beneficiary schemes such as Ayushman Bharat, National Action for Mechanized Sanitation Ecosystem (NAMASTE) and Sanitation Workers Rehabilitation Scheme (SWRS). In 15 cities (27 per cent), some kind of performance-based incentive or recognition for operators and workers is given every year. In 22 cities (39 per cent), all government and private sanitation workers engaged by the ULB have Identity cards. In 30 cities (54 per cent), records of all private and government sanitation workers are maintained and updated annually by the ULB. In 48 cities (86 per cent) in sanitation-related works, the operator or caretaker of the treatment facility and/or sanitation workers are paid regularly and on time. There is zero discrimination in the salaries and wages of sanitation workers based on gender.



कार्यालय,
महाप्रबन्धक (जल),
नगर निगम, मुरादाबाद
पीली कोठी, सिविल लाईन्स, मुरादाबाद



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ई-मेल: gmjalkalnm@gmail.com

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निर्माण खण्ड, उ0प्र0 जल निगम (नगरीय),
मुरादाबाद।

विषय:- अमृत कार्यक्रम के अन्तर्गत मुरादाबाद नगर में 32 के0एल0डी0 एफ0एस0टी0पी0 निर्माण की योजना (UTT-MOR-011) के अनुबन्ध संख्या-14/जी0एम0(गोमती) पी0एम0-1/2019-20 के अन्तर्गत निर्मित 32 के0एल0डी0 एफ0एस0टी0पी0 के हस्तान्तरण के सम्बन्ध में।

महोदय,

उपरोक्त विषयक आपके पत्र संख्या 1364/ए-9/16, दिनांक 04.07.2023, जो कि अमृत कार्यक्रम के अन्तर्गत खण्ड द्वारा काजीपुरा रोड, मुरादाबाद में निर्मित किये गये 32 के0एल0डी0 एफ0एस0टी0पी0 के हस्तान्तरण के सम्बन्ध में है, का सन्दर्भ ग्रहण करने का कष्ट करें।

अतः नगर आयुक्त महोदय के स्वीकृति आदेश दिनांक 07.07.2023 के अनुपालन में अमृत योजना के अन्तर्गत उ0प्र0 जल निगम, मुरादाबाद द्वारा काजीपुरा रोड पर निर्मित 32 के0एल0डी0 एफ0एस0टी0पी0 को नगर निगम मुरादाबाद द्वारा हस्तगत किया जाता है।

महाप्रबन्धक (जल)
नगर निगम मुरादाबाद।

प्रतिलिपि:-

1. नगर आयुक्त महोदय, नगर निगम मुरादाबाद को सादर सूचनार्थ प्रेषित।
2. अधीक्षण अभियंता, निर्माण मण्डल, उ0प्र0 जल निगम (नगरीय), मुरादाबाद को सूचनार्थ प्रेषित।

महाप्रबन्धक (जल)
नगर निगम मुरादाबाद।

9/7/23

जल ही जीवन है, जल की बचत करें।

HO.
730

Handing over letter, Moradabad

Figure 11: Percentage of cities against performance in institutional strengthening

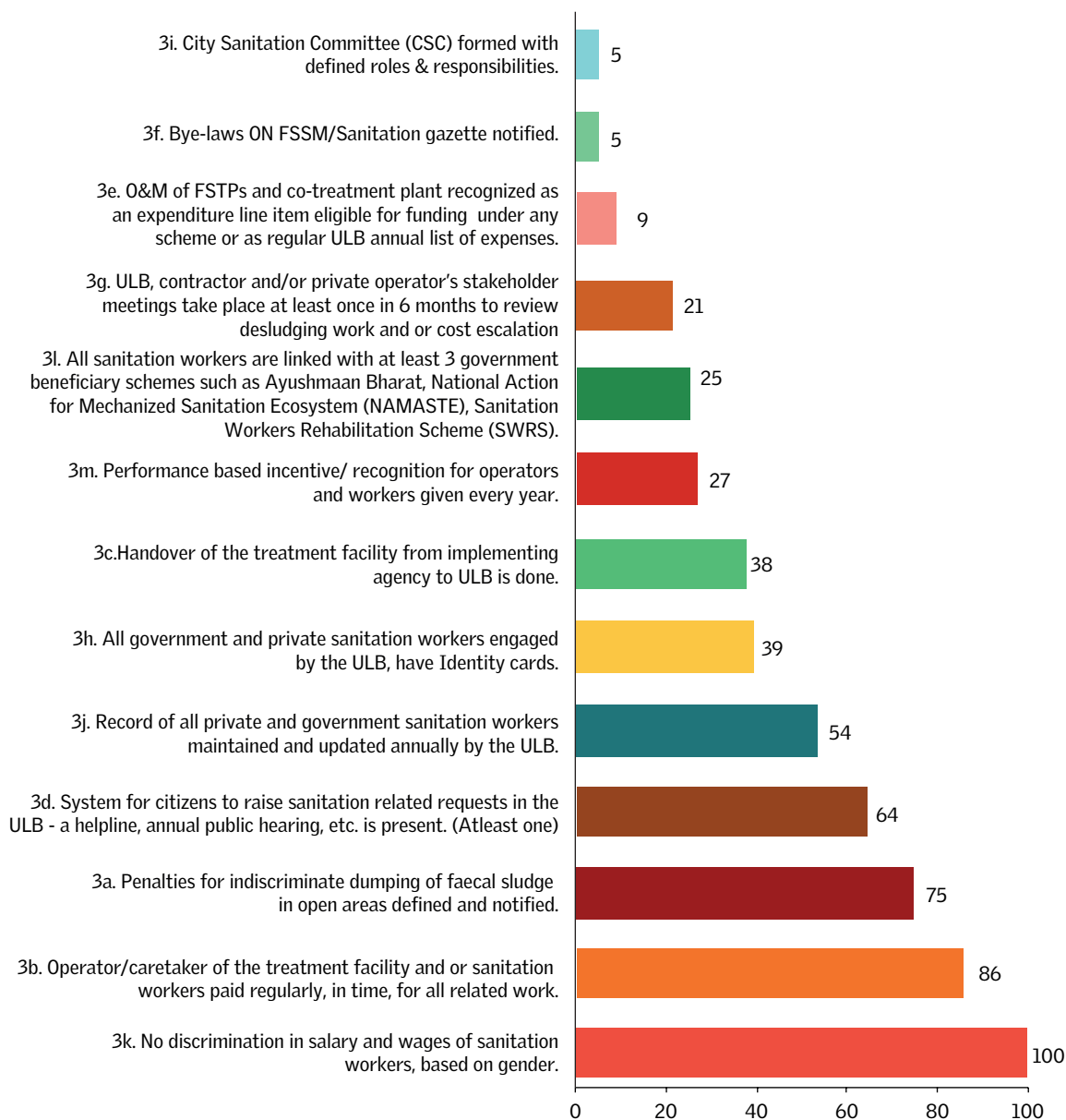
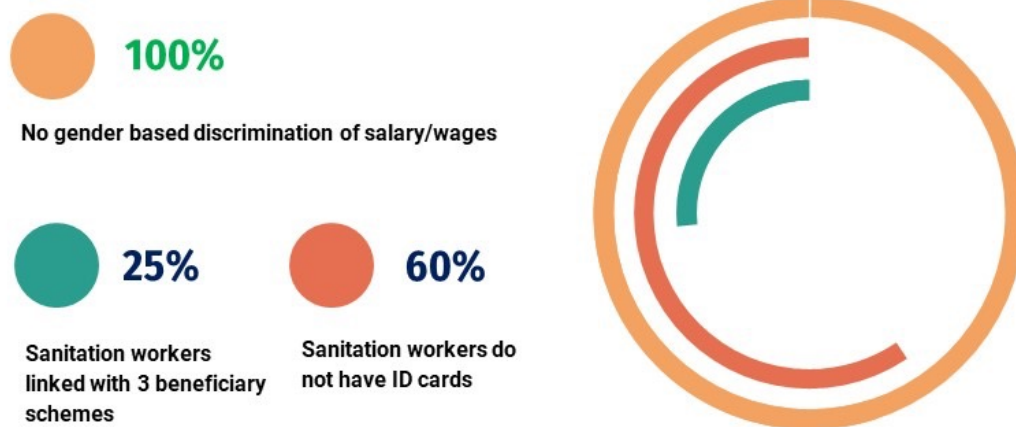


Figure 12: Percentage of cities that achieved various indicators related to welfare of sanitation workers



Stakeholders' meeting in Pilibhit



Meeting with sanitation workers in Modinagar

Challenges and the way forward

1. Infrastructure

- a) The completion status of FSSM projects in the state has improved. Currently, 57 plants are physically complete as compared to 19 plants in June 2022. However, it is crucial to resolve existing technical issues in the already “completed” plants to avoid bigger future problems; some of these plants have faulty modules. The ULB and UPJN are required to address those issues immediately. The construction of approach roads in 26 cities need to be completed as soon as possible, especially because the plants are now ready.
- b) The learnings from the construction of 57 plants are important for addressing FSSM in the rest of the 762 cities of UP.
 - i) Proper site selection for construction: Before the commencement of construction work, UPJN, in consultation with the local ULB, must do a pre-feasibility study. The distance of the site also needs to be close to the city, preferably within 10 km to reduce O&M cost for desludging services.
 - ii) Technology that enables low CapEx and OpEx is preferable.
 - iii) UP Jal Nigam (UPJN) is required to put in place quality monitoring during the construction of the plants and to resolve technical issues in the plants on the go. Cities with better field-level monitoring ensured faster completion and quality construction. Timely payments are crucial for contractors to make progress.
 - iv) For all future contracts, UPJN should ensure the testing related to the functioning of the various modules of the FSSM plant is done by an NABL-accredited firms before the handing over the same to the concerned ULB.
 - v) ULBs need to proactively participate in the construction process as the completed project will be handed over to them for operationalizing them. To address this, ULBs should align themselves with the construction process by regular coordination with UPJN to understand the purpose and construction of different modules. UPJN should also do regular

coordination and the consultation with ULB during construction of the FSS treatment infrastructure.

- c) Currently, not all the CTs/PTs are gender-, child- and/or disabled-friendly in the cities. In many places, the women's section of toilets do not have dispensing machines for sanitary pads, disposal systems, separate entrances etc. Many cities have constructed Pink Toilets at a few places that have facilities related to menstruation, but they need to be provided in all the community toilets and public toilets for universal access to safe sanitation facilities. People with disabilities face additional disadvantages as most toilets do not ensure accessibility, safety, privacy or cater to special needs.

Community toilet blocks should also include a toilet section for children with small doors (sometimes children accidentally lock themselves inside the toilet or are afraid to go to the toilet) and low-height washbasins.



Faecal sludge treatment plant (FSTP) at Chunar



Approach road for FSTP at Baraut



Approach road for FSTP at Bahraich

Some community toilets (CTs) and public toilets (PTs) remained close during our visit. ULBs need to keep the toilets accessible all the time.

- d) The basic problem of the sanitation value chain is rooted in the improper design of the septic tanks in the cities. Therefore, it requires regular training of masons who influence the design and construction of the septic tank. The state government and the city authorities also need to enforce the right design and construction of all future septic tanks.

2. Operations

- A. Capacity utilization of the plant and ensuring sludge reaches the FSSM plants: All the treatment plants must receive an adequate amount of sludge to ensure functionality. Currently only eight cities utilize more than 20 per cent of the plant capacity. Receiving adequate sludge at the plants is the biggest operational challenge, which requires to be addressed through the following steps:

-
- a. Plan for desludging: It requires ULBs, contractors and private desludgers to jointly prepare a city-level desludging plan and implement it to ensure the minimum daily sludge to the plant. The plan should include the desludging of government. Awas Yojanas, CTs and PTs along with other establishments.
 - b. Operationalize all the modules of the plants and desludging vehicles: In some plants, non-functional modules such as screw press, or batteries for solar panels disturb the functioning of the plant. The desludging vehicles with the ULBs, especially vehicles purchased from AMRUT, need maintenance and documents to start operating.
 - c. Implement awareness generation programmes at various levels in the city to inform people about the ULB initiative (helpline number, desludging fees, importance of regular emptying of septic tanks and proper disposal etc.).
- B. Regularizing private desludgers: In in many cities, private desludgers are the main support for providing desludging services to the citizens. However, to ensure that the sludge reaches the plant, cities need to regulate the private desludgers through registration, licensing and incentivization.
- C. Testing of treated biosolids and wastewater: 20 cities (36 per cent) meet SPCB/CPCB standards for treated wastewater. In the plants, testing reports from local laboratories are available but many of the reports are unreliable. It is therefore important that the cities regularly test the treated bio-solids and treated wastewater from NABL accredited laboratories.
- D. The state government should support the cities with a guideline on Standard Operating Procedures (SOPs) for the O&M of FSTPs and co-treatment plants. Maintenance of various registers including records of sludge received, schedule of operation and maintenance of various treatment modules to be done on an urgent basis.

3. Institutional strengthening

- A. Create city-level regulatory framework: All ULBs, as emphasized in the Uttar Pradesh Septage Management Policy, 2019 and Swachh Bharat Mission Urban 2.0 guideline, to install regulatory framework in the cities to mainstream FSSM. All ULBs need to ensure that the septic tanks are cleaned on a regular basis

- and the septage is only disposed of in the treatment plants through the gazette notification of the FSSM bylaws. These guidelines should be enabling and not restrictive for private operators, focussing on incentives and recognition for good performance. Revise the existing desludging fee, at least once in three years to match local requirements. The state should issue a Model FSSM Bylaws document for guiding the cities.
- B. Create functional city-level committees: All ULBs to constitute and have functional city-level committees for discussion and decision-making on issues related to sanitation and septage management. Swachh Bharat Mission Urban 2.0 guideline proposes functional City Sanitation Committees. This committee will be helpful in democratizing the problem identification, decision-making process and successful implementation of city-level septage management.
 - C. Create an expenditure line in the city budget: All ULBs to include an expenditure line in the city annual budget to cover the O&M costs for FSSM plant, desludging operations and other sanitation services.
 - D. Create a system for citizen engagement: All the ULBs need to create a system for citizens to raise their desludging requests and grievances. A common helpline across the cities or a city-specific helpline, community meetings or other forms of communication including using social media platforms are helpful means for engaging with the citizens.
 - E. Issue a clear guideline for handing over plants from UPJN to the ULBs: AMRUT provided funding solely for the capital expenditure (CapEx) of FSTPs and co-treatment plants, not for their operation and maintenance (O&M). As a result, AMRUT requires that all physically completed projects be transferred to the ULBs. The biggest barrier to the handover of the plants is the mobilization of a large amount of money (e.g. Rs 1.25 crore per year for a 32 KLD FSTP) to be provided by the ULBs to the existing contractor for O&M of the plants. ULBs cannot mobilize this amount of resources for the O&M of the plants. Therefore, the state government should issue a guideline about the modalities of the handover process and future actions.
 - F. Recognize the efforts of sanitation workers:
 - a. There are government welfare programmes being implemented by both the Central and the state government for the welfare of disadvantaged communities. Although sanitation workers are engaged directly by the city authorities, they are not looped in the existing government programmes.

The cities need to link all the sanitation workers, especially privately or contractually hired ones, with at least three government programmes or schemes.

- b. Recognize the efforts of sanitation workers by allowing them performance-based incentives. Many sanitation workers do not have even an ID card from the ULB—ULBs should issue ID cards. Dignifying the value of their work will add quality to the city’s sanitation service levels. Cities need to document basic information of all sanitation workers, private or government, and update regularly.
- c. There is no gender-based discrimination in the payment of sanitation workers, which is a good example. The state should take more gender-friendly approach in the sanitation sector. For example, PPE kits provided to sanitation workers should be customized for women.

Experience from implementation of ESM tool: Scope for improvement

- The responses to a few indicators are captured based on exposure to a limited sample and upon discussion with city officials. For example, the survey team only visited a sample area or unit and had discussions with city officials to gather data on the ODF status of the city and the cleanliness of toilets.
- The reasons for compliance and non-compliance of indicators are not captured while the tool is administered. Therefore, it is unfair to comment on the “why” part of the story. For example, while the tool captures whether the City Sanitation Committee is formed or not, it does not capture why it is so. Therefore, the data gathered through the tool needs to be substantiated with further research to understand the reason behind the achievement of certain indicators. Alternatively, more time should be allotted for the process of data collection.
- Some words used in the indicators are subjective and need more specificity. For example, the words “sufficient” and “appropriate” are used to check if the cities have “sufficient” vehicles for desludging, and “appropriate PPEs” are used by all sanitation workers.
- To capture responses against indicators such as “ULB monitors and penalizes registered septic tank desludging operators to ensure that they do not discharge sludge in non-designated areas”, the survey team depends on evidences such as

“past fine”, record of any “penalty” or “newspaper advertisement”, and does not assess the intensity and quality of monitoring at the ULB level for assessing the specific indicator.

- Data analysis can only indicate status of city performance in CWIS with the limited set of indicators and cannot fully represent the status of the city in terms of CWIS outcomes and functions.

Annexure

Ease of Septage Management (ESM) indicators



One star rating (eight indicators)			
Thematic area	Indicator	Means of verification	Response (Yes/No)
1. INFRASTRUCTURAL	1a. Town is Open Defecation Free	ODF certificate	
	1b. Treatment infrastructure exists for sludge generated in the city in form of either FSTP/co-STP or agreement with nearby ULB	Field observation/MoU with nearby ULBs	
	1c. All-weather serviceable approach road to the faecal sludge treatment plant or co-treatment plant.	Field observation	
2. OPERATIONAL	2a. Treatment facility is running at 20 per cent of its maximum capacity in the last month	Logbook records at treatment facility	
	2b. Treated wastewater meets standards laid down by SPCB/CPCB.	Sample test reports by competent lab/field observation, if no lab report is available	
	2c. Number of desludging vehicles are sufficient to cater (registered private operator or government) desludging requests on timely basis (within three days)	Field observation/key informant interviews	
3. INSTITUTIONAL	3a. Penalties for indiscriminate dumping of faecal sludge in open areas defined and notified.	ULB notification/provision in byelaws/Advertisement	
	3b. Operator/caretaker of the treatment facility and or sanitation workers paid regularly, in time, for all related work	Salary slips/records/ Interview with workers	
	Total		8



Two-star rating (one star + 13 indicators)			
Thematic area	Indicator	Means of verification	Response (Yes/No)
1. INFRASTRUCTURAL	1d. Functional and clean CTs/PTs located in the town in all public places and slums.	Random field observation/ Swachh Sarvekshan (Clause 3.4)	
	1e. Treatment facility is running at 40 per cent of its maximum capacity in the last month.	Logbook records at treatment facility	
2. OPERATIONAL	2d. Treated biosolids and/or wastewater is reused or safely stored	Field observation/notification from ULB (separate data capturing for biosolids and wastewater)	
	2e. Date-wise tanker decanting records maintained at the treatment facility.	Logbook records at treatment facility	
	2f. Faecal sludge regularly desludged from toilets in Institutional or housing colonies (Awaz Yojana, etc.) and CTs/PTs, at least once in six months.	Logbook record at facility (Last 3 months record)	
	2g. All private desludging operators formally registered by the ULB and operate under ULB license. (If there are no private operators in the ULB, automatic response as "Yes")	Registration/license records at ULB	
	2h. Appropriate PPEs used by all sanitation workers and or workers at treatment facility.	ULB maintained records/ observation	
3. INSTITUTIONAL	3c. Handover of the treatment facility from implementing agency to ULB is done.	Handover letter signed by both parties	
	3d. System for citizens to raise sanitation-related requests in the ULB—a helpline, annual public hearing, etc.—is present (at least one).	Advertisement by ULB/ Field observation if the system is present	
	3e. O&M of FSTPs and co-treatment plant recognized as an expenditure line item eligible for funding under any schemes or as regular ULB annual list of expenses.	Finance records of the ULB	
	3f. FSSM and sanitation bylaws gazette notified.	Bylaws document with gazette notification	
	3g. ULB, contractor and/or private operator's stakeholder meetings take place at least once in six months to review desludging work and or cost escalation	Past meeting records	
	3h. All government and private sanitation workers engaged by the ULB have Identity cards.	ID card issue register/ Observation/key informant Interviews	
	Total		13



Three-star rating (one star + two star + 13 indicators)			
Thematic area	Indicator	Means of verification	Response (Yes/No)
1. INFRASTRUCTURAL	1f. CTs/PTs are women-, disabled- and child-friendly	Data filled by ULB in Swachh Sarvekshan (3.4)/Observation	
	1g. Treatment facility is running at 90 per cent of its maximum capacity in the last month	Logbook records at treatment facility	
	1h. 100 per cent of treated water and treated bio-solids at the treatment facility being reused or safely stored	Field observation/notification from ULB/Records maintained	
	1i. Masons/SHGs in the city are provided training on construction of standardized septic tanks/O&M of treatment facility by the ULB once a year.	Past records maintained at ULB	
2. OPERATIONAL	2i. Appropriate PPEs used by all female workers	ULB maintained records/ observation	
	2j. ULB monitors and penalizes registered septic tank desludging operators to ensure that they do not discharge sludge in non-designated areas.	Past fine/penalties records	
	2k. ULB has differential/lower rate slab for the poorest settlements.	ULB notification/past records	
	2l. At least one round of orientations/trainings is provided to the sanitation workers engaged by ULB including operators on Health & safety aspects covering gender issues.	ULB records—Swachh Sarvekshan (Clause 1.5)	
3. INSTITUTIONAL	3i. City Sanitation Committee (CSC) formed with defined roles & responsibilities.	ULB issued notification	
	3j. Record of all private and government sanitation workers maintained and updated annually by the ULB.	ULB records—Swachh Sarvekshan (Clause 1.5)	
	3k. No discrimination in salary and wages of sanitation workers, based on gender.	Salary slip/records	
	3l. All sanitation workers are linked with at least 3 government beneficiary schemes such as Ayushman Bharat, National Action for Mechanized Sanitation Ecosystem (NAMASTE), Sanitation Workers Rehabilitation Scheme (SWRS).	ULB records—Swachh Sarvekshan (Clause 1.5)	
	3m. Performance based incentive/ recognition for operators and workers given every year.	Past records/events	
	Total		13

The Ease of Septage Management (ESM) Tool ranks cities based on their performance in providing septage management services. This report captures a snapshot of the journey—from the creation of infrastructure to its operation and maintenance, and further to provision of inclusive sanitation services—of 56 cities of Uttar Pradesh where either faecal sludge treatment plants (FSTPs) or co-treatment plants are planned and implemented for septage management.

The report is based on primary data gathered through the first-ever implementation of the ESM Tool. The status of the performance of the cities against various indicators shows how the cities are performing, what more needs to be done to provide affordable, equitable and inclusive sanitation services to citizens, and where are the cities positioned in their drive to ensure Citywide Inclusive Sanitation (CWIS) in its true sense.



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