Convergence Approaches for Moving towards Climate resilient WASH services

Aasim Mansuri on behalf of CWAS team

Urban WASH workshop for Small towns – Water Aid, India

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CWAS CENTER FOR WATER AND SANITATION | CRDF CEPT RESEARCH AND DEVELOPMENT FOUNDATION | CEPT UNIVERSITY

Small and Medium towns of Maharashtra acting as “Urban laboratories” for building climate responsive WASH services…

- 6 Small and Medium towns of Maharashtra ranging from **40,000 to 4 lakh population**
- Towns are **located in different climate conditions** facing drought as well as flood situations
- All towns have **different WASH services context in terms of services provision both onsite and offsite water and sanitation services**.
- Project initiatives have been **led by local governments** and integrated into the existing institutional framework
- **Convergence with existing central and state mission** programs leveraged for citywide scale up

Climate Inclusive WASH services . . .

Energy Transition

Nature Based Solutions

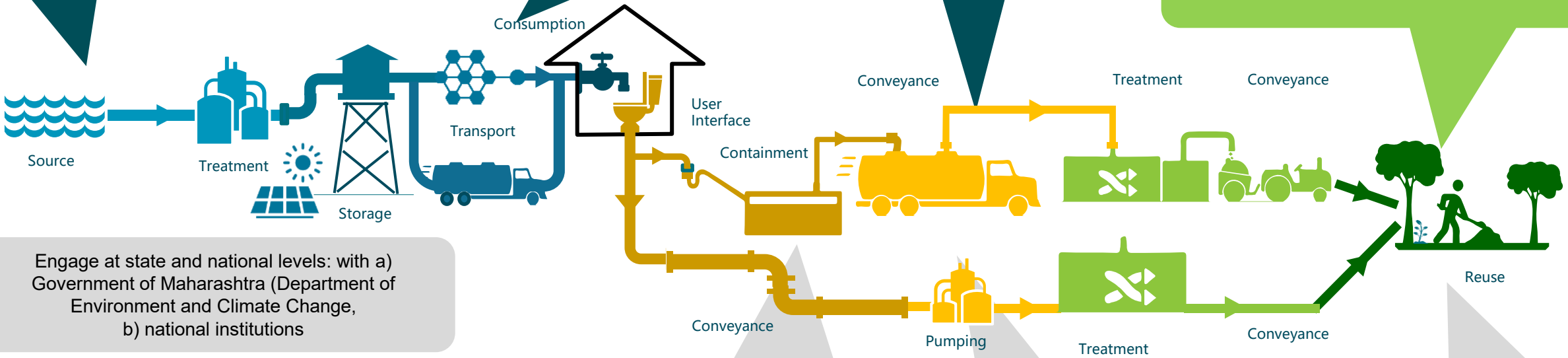
Inclusive services

Assessment of water and sanitation services and emissions in operations – energy and water audit

Use of clean energy such as solar power for various WASH operations. Use of energy efficient machinery

Use of clean energy for septic tank desludging service and electric charging station

Urban forests as carbon sink units at treatment facilities



Engage at state and national levels: with a) Government of Maharashtra (Department of Environment and Climate Change, b) national institutions

Equitable and citywide inclusive services - Plan for citywide coverage of IHHT and scheduled desludging service in consultation with city governments

Safaimitr suraksha -Sanitation worker safety training and sensitization

Gender Empowerment - Plan for involving SHGs in consultation with city governments - NULM convergence

Technical support and capacity building for municipal staff

Transaction advisory support to ULBs

Action-research on emerging topics

Scaling up through partnership at statelevel

Overview of convergence approach for initiatives under Climate Resilient WASH

	Key Climate Inclusive WASH Aspects	State / National Missions
1	**FSSM** Universal Access of individual household toilet (IHHT) Citywide Scheduled desludging for septic tanks Safe Treatment and Reuse Support for Improving CT/PT from a Gender Lens	Swachh Bharat Mission (SBM) 2.0 ODF+/++ , Water + certifications Swachh Survekshan AMRUT 2.0 Service level benchmarks
2	**Urban Forests as Carbon Sinks** Carbon sinks through plantations of indigenous variety of plants SHG engagement for O&M	Mahji Vasundhara Abhiyan Harit Maharashtra Tree Conservation Act 2021 - 33% green cover NULM –SBM Convergence
3	**Energy Transition** Solar installations at WASH treatment facilities WASH Energy Audit Electric desludging truck and charging station	Mahji Vasundhara Abhiyan State Mission on Energy Transition (SMET) Maharashtra Electric Vehicle Policy 2025
4	**Cross cutting Initiatives on inclusivity and municipal strengthening** Gender: Sensitization trainings for HODs and sanitation workers Municipal Strengthening : Budget Briefs, Payment Dashboard, Adhava review meeting Trainings to women elected representatives Sanitation workers trainings and heath camps	DMA reporting Safai Mitra Suraksha Challenge NULM –SBM Convergence

Support increasing coverage of individual toilets under SBM 2.0

- Under SBM 2.0 the remaining households mainly **face space or financial constraints** for which CWAS has supported ULBs
- Support was provided in mobilizing toilet applications, especially in **slum and vulnerable areas**
- Conducting follow-ups with State Mission Office for fund disbursement
- Digital household survey conducted using **Sanitab app** in local language supported by training by sanitation supervisors.

Convergence aspects

- Support in achieving targets for IHHT under SBM 2.0
- Helps ULB prioritize to utilize funds for IHHT and also report for utilization at State mission office
- Cities are able to pass and sustain certifications

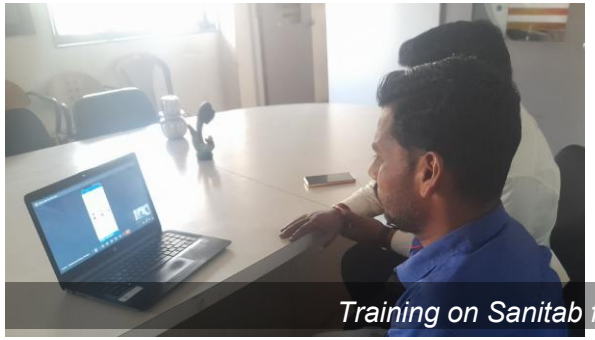
Ministry of Housing and Urban Affairs
Government of India

स्वच्छ भारत
एक कदम स्वच्छता की ओर

Swachhatam
Swachhata Management Platform

SWACHH CERTIFICATION PROTOCOLS

ODF ODF+ ODF++ WATER+



Training on Sanitab for IHHT survey and on field survey for mobilizing applications for IHHT

Making community toilets gender inclusive

- Ensuring safe and continued access to community toilets for vulnerable populations during climate-related disasters is critical.
- CWAS has supported ULBs for retrofitting and menstrual health and hygiene **(MHM) machines at high footfall CTs.**
- The procurement and O&M was institutionalized through budget allocations under relevant **budget heads** to ensure sustainability.
- Women SHGs have been formally engaged to maintain the repaired and MHM installed community toilets through an **'NULM SHG only' tender**.

Convergence aspects

- Support for **SBM 2.0 under Aspirational toilets**
- Points under **Swachh Survekshan** for clean and operational Community toilets and working MHM facilities
- Cities are able to pass and sustain certification

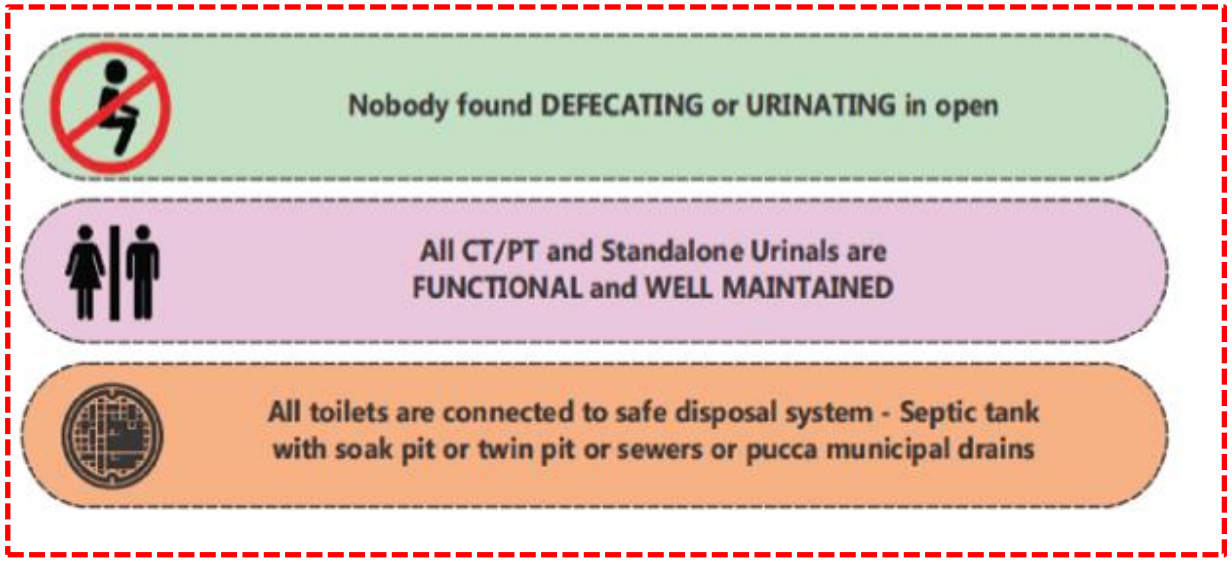
MHM machines installed in CT/PT and formal engagement of women for their operations and maintenance

Efforts towards increasing IHHT coverage and inclusive CT/PT leads to support convergence efforts

SBM 2.0 Certifications and protocols

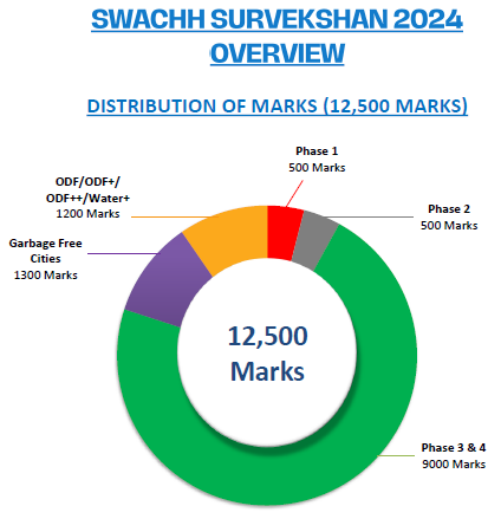
ODF+ Conditions

At any point of the day, not a single person is found defecating and / or urinating in the open, AND all community and public toilets are functional and well maintained.



- In order to attain **ODF + condition** it is mandatory required that all CT/PTs in the city are functional and well maintained.

Swachh Survekshan



- **1200 marks** are for ODF certifications

SECTION 4: ACCESS TO SANITATION

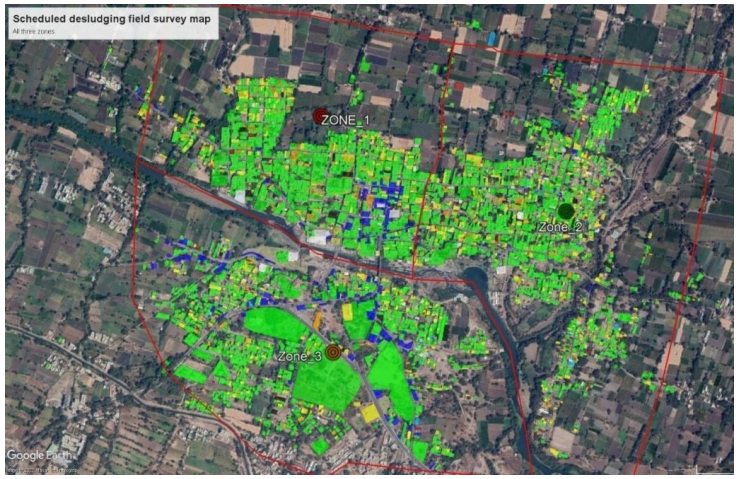
1000 MARKS, 10%

No.	Indicator Description	Marks
4.1	Measures taken by ULB for prevention of Open Defecation	100
4.2	Functional, well maintained and well equiped Public Toilets	300
4.3	Functional, well maintained and well equiped Community Toilets	300
4.4	Functional, well maintained and well equiped Urinals	150
4.5	Well maintained toilets in school	150
	TOTAL	1,000

- **750 marks** for well maintained CT/PT and urinals

Scheduled desludging leading to multidimension positive impact...

- More than **10,000 septic tanks** have been desludged in these cities. With Wai completing 1st cycle of scheduled desludging.
- Leading to reducing **60 % organic load in drains** and improving river water quality.
- Safely collecting and treatment of **90 + million** liters of faecal sludge.
- Scheduled desludging is **ongoing in Ichalkaranji, Vita, Sinnar, Wai and Satara through private sector** engagement



- Reduction in Nitrogen, Total Suspended solids and Organic loads in septic tanks effluent after desludging them

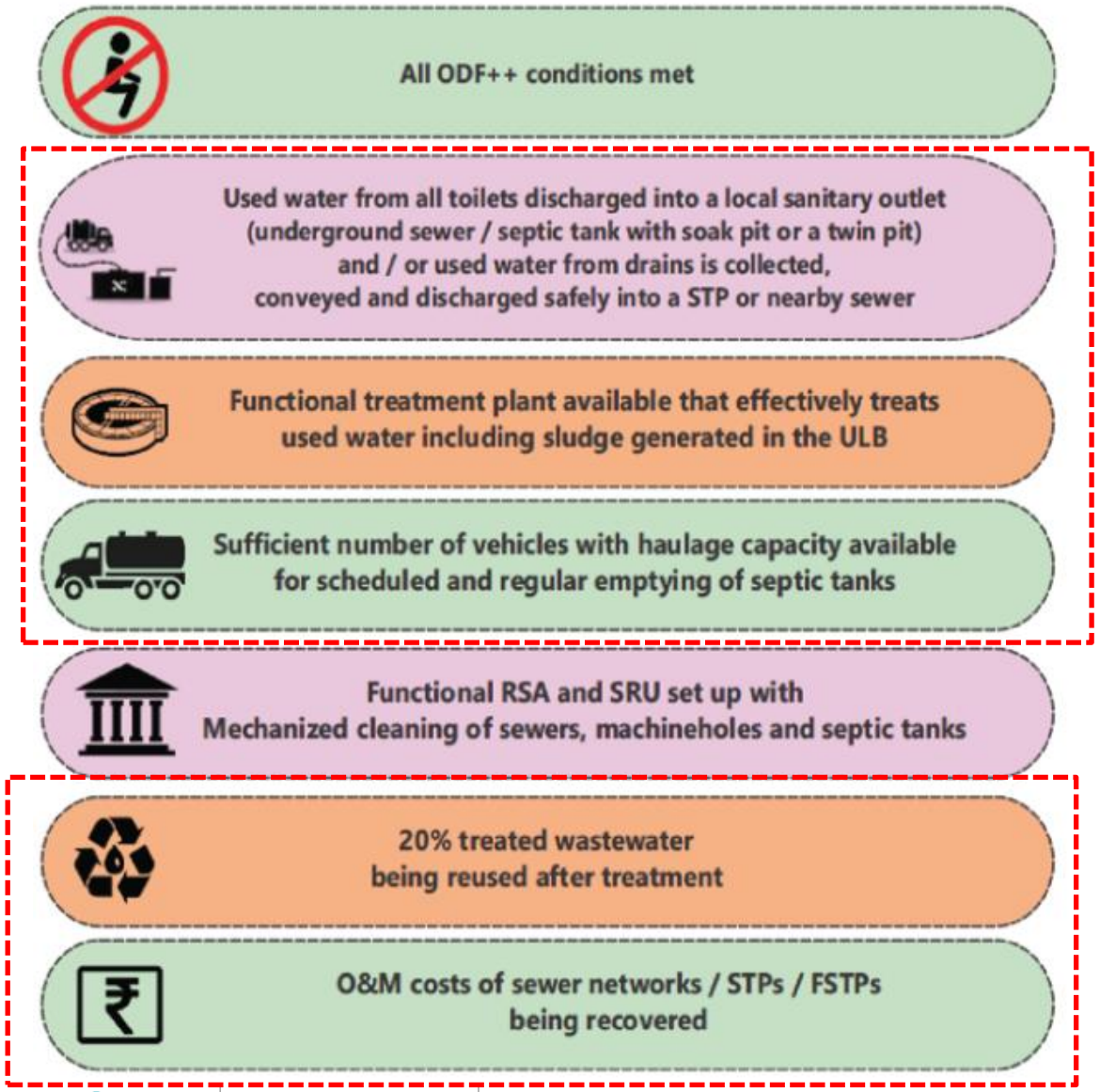
- Reduced concentration from septic tank effluent helped in reducing the discharge of nitrogen and TSS into the open drains
- 50-60% decrease in the value of TSS in desludged areas
- 50-60% decrease in BOD load in drains in desludged areas

- Regular desludging services will eventually improve the quality of river water and ground water as the quality of drain water and supernatants will improve

Urban forest (carbon sinks) at FSTP using treated wastewater

- Almost **19,764 Sq.mt. barren area** developed to urban forest in all the six cites with total 10,306 trees planted, and 80 million liters of fresh water has been saved.
- The **treated wastewater is** used to develop urban forests adjacent to treatment facilities.
- Urban forests involve planting saplings, primarily of local **indigenous varieties.**

Citywide Scheduled desludging and treatment converges with ULBs achieving water + certification



Swachh Survekshan

SECTION 5: USED WATER MANAGEMENT

1000 MARKS, 10%

No.	Indicator	Marks
5.1	Connectivity to a closed system	150
5.2	Sewage/Faecal Sludge Transportation	300
5.3	Scientific processing of faecal sludge and sewage (Capacity)	200
5.4	Scientific processing of faecal sludge and sewage (Treatment)	250
5.5	Scientific processing of faecal sludge and sewage (Reuse/Recycle)	100
	TOTAL	1,000

- **1000 marks** could be achieved with scheduled desludging since it would ensure both connectivity, transportation and treatment at FSTP/ STP

Service level Benchmarks and the AMRUT 2.0

- The Service Level Benchmarks for Water and Sanitation in India recommend **20% reuse of treated water** as the performance benchmark for Indian Cities

- AMRUT 2.0 mandates **100% coverage of sewerage and septage management** in its 500 mission cities, including faecal sludge treatment facilities with full treatment and reuse arrangements

- The operational guidelines direct to ensure that **used water (waste water) is treated and put to reuse to meet 20% of cities water demand** and 40% of Industry water demand in aggregate at the state level.

Sl. No.	Functional outcomes	Admissible elements of Projects
2	Providing universal coverage of sewerage and septage management in 500 AMRUT cities and promoting circular economy of water	• Sewerage network • Interception and Diversion (I&D) infrastructure • Sewage Treatment Plants (STPs) • Tertiary Treatment with end-to-end reuse plan (preferably in PPP mode) • Faecal sludge and Septage management (FSTP cum STP Plant & collection mechanism) • Provision/ augmentation and rehabilitation of sewerage systems with end-to-end treatment and reuse • Tapping of used water for recycling • Identifying the bulk users of recycled used water and facilitating sale of used water to potential users (e.g. industrial clusters such as textile/ leather/ paper/ power plants/ railways, etc.) • Smart solutions like SCADA • Last mile connectivity to households (Not exceeding ₹ 3000 per HH)

Urban forests developed as carbon sinks have helped cities achieve targets under Mahji Vasundhara Abhiyan (MVA)

- **Majhi Vasundhara Abhiyan (MVA)** is a competition-based campaign by the State Government of Maharashtra to promote citizen participation in climate change mitigation and environmental sustainability.

- Under the MVA, there are points allocated for tree plantation. Based on the toolkit guidelines (MVA 5.0 version)

- As per the Tree Conservation Act 2021 of the State government, target have been provided to achieve **33% tree cover.**

- **'Harit Maharashtra'** program has been launched to promote sustainable cultivation of bamboo, fruit trees, other plants. District wise targets are given to for the cultivation.

1.1.1	Trees Planted and Survived during Majhi Vasundhara Abhiyan	Marks 600

Tree plantation is an essential step towards conserving our planet and ecosystem. Trees help stop climate change by removing carbon dioxide from the air, storing carbon in the trees and soil, and releasing oxygen into the atmosphere. This indicator examines whether plantation drives were taken up by the local bodies and survival of trees including indigenous species.

	Evaluation mechanism	Marks
1.	Total number of trees planted and survived during Majhi Vasundhara Abhiyan 5.0 (Relative Marking)	200
2.	**Indigenous trees:** Percentage of **indigenous trees** planted and survived during Majhi Vasundhara Abhiyan 5.0 (Relative Marking)	200
3.	**Upkeep:** Trees planted and survived during Majhi Vasundhara Abhiyan 1.0, 2.0, 3.0 and 4.0 (Relative Marking)	200

- **Details required for supporting progress:**
- Total number of trees planted and survived (inclusive of indigenous trees).
- Number of indigenous trees planted and survived.
- Location details: Complete address, location of the project on Google map in prescribed excel format.
- For plantations on plot: Green areas developed in square meters (sq. m).
- For roadside plantation: Length of roadside plantation in meters (m).
- Work order and work completion certificate of the plantation activities.
- Financial brief of the plantation activities: all payments including final payment receipts. In case, the plantation activities were supported under Corporate Social Responsibility (CSR), copy of acknowledgement receipt is required.
- Maintenance plan for next 1-2 years.
- Stage wise geotagged photographs. More details are attached in the Annexure.
  - Before plantation drive (size 1 to 2 MB)
  - During the plantation drive (size 1 to 2 MB)
  - During the last two months of Majhi Vasundhara Abhiyan 5.0. (size 1 to 2 MB)
  - *Above all photos should be clicked from the same location and same angle.*
- **Local bodies can plant trees under the campaign 'Ek Ped Maa Ke Naam'.**
- If the documents provided are not valid/legible and/or the Google link is invalid, no marks will be allotted for this indicator.

Energy transition for municipal waste management operations through solar installations

- **280 Kw solar pilots** at WASH infrastructure helped leverage **2000+ Kw** of Solar projects using public funds by the local governments
- **FSTP cities such of Wai, Vita and Satara are energy neutral**
- IMC have floated a tender for installation of solar panels of capacity **800kW.**

Wai FSTP – 30Kw

Sinnar FSTP – 15 Kw

Vita FSTP and Pumping stations – 30 Kw

Ichalkaranji WTP– 81 Kw

Karad STP– 72 Kw

Satara FSTP – 30 Kw

Expanded FSTP of 30 KLD with green house solar dryer. Beautifying area around FSTP site

Energy transition to solar aligns with central and state missions on the move towards clean energy

- **Maharashtra state's 100-day action plan** focuses on urban electricity bill reduction through renewable energy for which ULBs are directed to take efforts towards clean energy transition with fund **availability**. The GR is issued under the "**Majhi Vasundhara**" framework, more specifically linked to the Urban Infrastructure Development Scheme.

- Under **Majhi Vasundhara,** points are allocated for moving to clean energy through solar power.

- To support ULBs in reducing electricity bills by installing solar energy systems on their own buildings. **Financial assistance** has been provided as per State government GR. ULBs to prepare DPR and get technical sanction from **MEDA**

4.2.2	Renewable Energy Installations in the Local Body	Marks 500

By transitioning to the use of renewable energy against conventional energy, local bodies can contribute to help our nation to meet its net zero target by 2070 and energy independence goal by 2047. In this indicator, local bodies will be evaluated based on the cumulative capacity of solar installations and renewable energy installations during Majhi Vasundhara Abhiyan 5.0

	Evaluation mechanism		Marks
1.	Total capacity of solar installations during Majhi Vasundhara Abhiyan 5.0 (in kW) (Relative Marking)		200
	Public Buildings	100	
	Private Buildings	100	
2.	**Upkeep:** Total capacity of solar installations (in kW) during Majhi Vasundhara Abhiyan 1.0, 2.0, 3.0 , 4.0 (Relative Marking)		100
3.	Total capacity (in Liter per Day) of solar water heaters installed in a Local body (Relative Marking)		100
4.	Capacity of renewable energy projects (in kW) (Relative Marking)		100
	Commissioned and functional	100	
	Tenders have been called in	50	

Details required for supporting progress:

- Details of public and private buildings - in prescribed excel format.
  - with solar rooftop
  - solar installation in building complexes
  - solar water heaters
- Details of renewable energy projects in the local body- in prescribed excel format.
- Energy saving report due to installation of renewable energy technologies, solar rooftop/ solar installation in local bodies, such as before and after electricity bills.
- Copy of Commissioning Certificate for all renewable energy installations, solar installations.
- **For this indicator, private buildings will refer to any residential and commercial building whereas public building refers to government buildings, educational establishments, etc.**
- Geotagged photographs of renewable energy projects and solar installations (before and after) (size 1 to 2 MB)

Note- Solar projects mentioned in Evaluation Mechanism Point 1, 2 and 3 will not be considered in Point 4

Gender empowerment through formal engagement of SHGs and gender sensitization techniques.

- Women NULM registered SHGs have been formally engaged through **SHG only tenders** and model SHG friendly contracts.
- The SHGs have been engaged for **O&M of urban forest, O&M of MHM machines, grey water treatment plants, facility management of ULB buildings**
- In order to strengthen the inclusion of **gender, sexuality, and rights in urban sanitation** gender sensitization trainings conducted for HODs and sanitation workers.

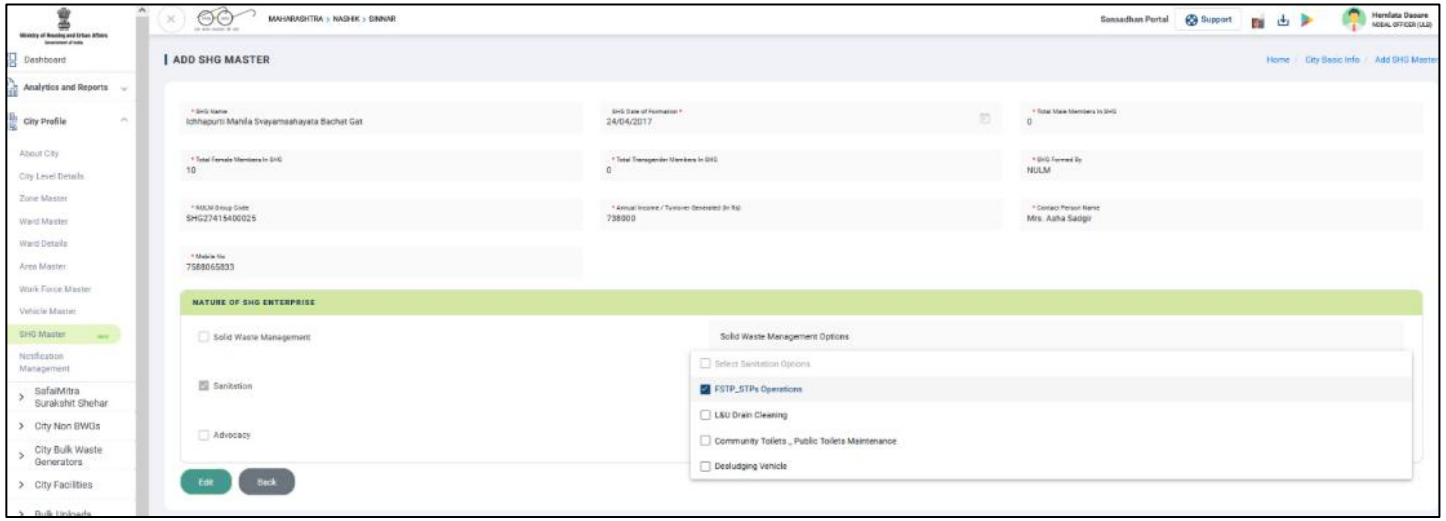
Gender trainings of HODs

Meeting with SHG and NULM Department

Gender trainings of sanitation workers

Formal engagement of women SHG has helped achieve SBM-NULM convergence

- Formal engagement of women SHGs climate- WASH activities have enabled effective convergence between **SBM and NULM, aligning sanitation service delivery** with livelihood generation goals.
- The ULBs could show the converge efforts through reporting on SHG details, type of activities engaged, trainings conducted etc



- The **MVA** also encourages SHG engagement and has 100 marks allocated.

- Under **AMRUT Mitra** programs and funds allocation available for SHG engagement

5.6	Engagement of Self-Help Groups	Mark 100

Self-Help Groups (SHGs) are small informal associations of people who come together for a common purpose of solving their issues and problems through self-help and community action.

	Evaluation mechanism		Marks
1.	Number of SHGs registered for Environment activities in the Local body. (Relative Marking)		20
2.	Number of SHG engagement activities during Majhi Vasundhara Abhiyan 5.0 (Relative Marking)		50
	Service oriented	30	
	Awareness campaigns	20	
3.	Number of SHGs having a signed contract with local body for environmental activities during Majhi Vasundhara 5.0 (Relative Marking)		30

Details required for supporting progress:

- Name and details of Self-Help groups registered in the local bodies in prescribed excel format.
- Details of SHGs involved in environmental activities like:
  - Awareness campaigns – Environment, Majhi Vasundhara Abhiyan
  - Green cover & biodiversity – tree plantation, nursery, garden maintenance
  - Water conservation - management of wells and water bodies,
  - SWM activities – waste collection, segregation and processing Sanitation activities – toilet Operation & Maintenance
- Signed contract copies between SHGs and local body.
- Geotagged photographs (Size 1 to 2MB) of the environmental activities conducted by SHGs.
- If the documents provided are not valid/legible, no marks will be allotted for this indicator.

Cross Cutting aspects: Municipal strengthening through use of innovative tools and monitoring systems

- Innovative tools to improve monitoring and reporting of WASH – Climate initiatives have been implemented in the cities. This not only helps with improving their performance but also **reporting to Directorate of Municipal Administration (DMA)**

Process Level Initiatives

- **City level government resolutions** for most of the activities to ensure sustainability
- **Convergence with ongoing missions and programs** for sustainability and citywide scale-up

Financing initiatives

- **Escrow mechanism** for ensuring risk mitigation for private sector
- **HAM model** for scheduled desludging

Contracting initiatives

- **'NULM SHG' only tenders** for formal engagement with local government
- **Performance based contracts** for private sector for WASH operations

Monitoring Initiatives

- **SaniTab and Sanitrack apps** for real-time online monitoring of scheduled desludging and treatment
- **Budget brief and payment dashboard** for municipal strengthening
- **App for real-time monitoring of solar generation** at WASH infrastructure

Summary of impacts for cities moving towards climate resilient WASH

8 lakh beneficiaries impacted across six cities

FSSM services (scheduled desludging and treatment)

Scheduled desludging through PPP being implemented , to provide **inclusive services to 700,000 people**

90+ million litre septage delivered and treated at the treatment facilities

90-95% acceptance rate from HHs for scheduled service

Households pay sanitation tax instead of high user charges for desludging

Vulnerable properties are being serviced through scheduled desludging services

Climate change related (urban forest and solar powered FSTP)

19,500+ sqmt of Urban forests as **carbon sinks** at WW treatment facilities has helped **leverage 30,000sqmt** of Urban forest

80 million litres of fresh water saved by using of treated water from **STP/FSTPs for urban forests**

10,000+ trees planted during project period

280 Kw solar pilots at WASH infrastructure helped **leverage 2000+ Kw of Solar projects** from cities

Inclusive services (Gender empowerment & sanitation worker safety)

Women SHGs formally engaged for **O&M of of the urban forest**

MHM facilities catering to **2000+ vulnerable population** through CTs/PTs in these cities **managed by SHGs**

Gender inclusivity sessions with **200+ ULB staff**

Safety of 1000+ Sanitation workers ensured through **trainings** and **model contract clauses**

STATEWIDE SCALING UP

MoU with Government of Maharashtra **Department of Environment and Climate Change** for scaling up initiatives at State level

Continue efforts towards scale up and convergence across national and international platforms

City

CWAS – in partnership with the city ULBs moving towards Climate Resilient WASH

- Scaleup of Climate and WASH related activities using council funds thereby leveraging the funds and resources.
- Expanding efforts towards water conservation and restoration.

State

CWAS - Partner to the state government for implementing the SWACHH MAHARASHTRA MISSON URBAN and

MAJHI VASUNDHARA MISSION –

400 cities
60 Million Urban population

एकच लक्ष्य शहरे स्वच्छ
स्वच्छ महाराष्ट्र अभियान (नागरी) २.०

माझी वसुंधरा

National

Influenced
National Policies and guidelines

Global

Support to
Kabwe, Zambia for Scheduled Desludging

- 'Swachha Bharat Mission 2.0' mandates provision of scheduled desludging service as a part of ODF++ protocol in India
- 1000+ FSTPs in planning or implementation phase in India, 300+ FSTPs alone coming up in Maharashtra.
- Resource recovery and use of clean energy - adopted in these cities
- Cities contributing towards achieving SDG 5, 6, 13, 11, 17.
- SBM-NULM-Majhi Vasundhara convergence initiative at state level is also being implemented in Maharashtra.

Summary of convergence approaches . . .

	Key Climate Inclusive WASH Aspects			State / National Missions
1	**FSSM**			Swachh Bharat Mission (SBM) 2.0 ODF+/++ , Water + certifications Swachh Survekshan AMRUT 2.0 Service level benchmarks
	Universal Access of individual household toilet (IHHT)	Citywide Scheduled desludging for septic tanks	Safe Treatment and Reuse	
	Support for Improving CT/PT from a Gender Lens			
2	**Urban Forests as Carbon Sinks**			Mahji Vasundhara Abhiyan Harit Maharashtra Tree Conservation Act 2021 - 33% green cover NULM –SBM Convergence
	Carbon sinks through plantations of indigenous variety of plants	SHG engagement for O&M		
3	**Energy Transition**			Mahji Vasundhara Abhiyan State Mission on Energy Transition (SMET) Maharashtra Electric Vehicle Policy 2025
	Solar installations at WASH treatment facilities	WASH Energy Audit	Electric desludging truck and charging station	
4	**Cross cutting Initiatives on inclusivity and municipal strengthening**			DMA reporting Safai Mitra Suraksha Challenge NULM –SBM Convergence
	Gender: Sensitization trainings for HODs and sanitation workers	Municipal Strengthening : Budget Briefs, Payment Dashboard, Adhava review meeting		
	Trainings to women elected representatives	Sanitation workers trainings and heath camps		

Thank You

About us

The Center for Water and Sanitation (C-WAS) at CEPT University carries out various activities – action research, training, advocacy to enable state and local governments to improve delivery of services.

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