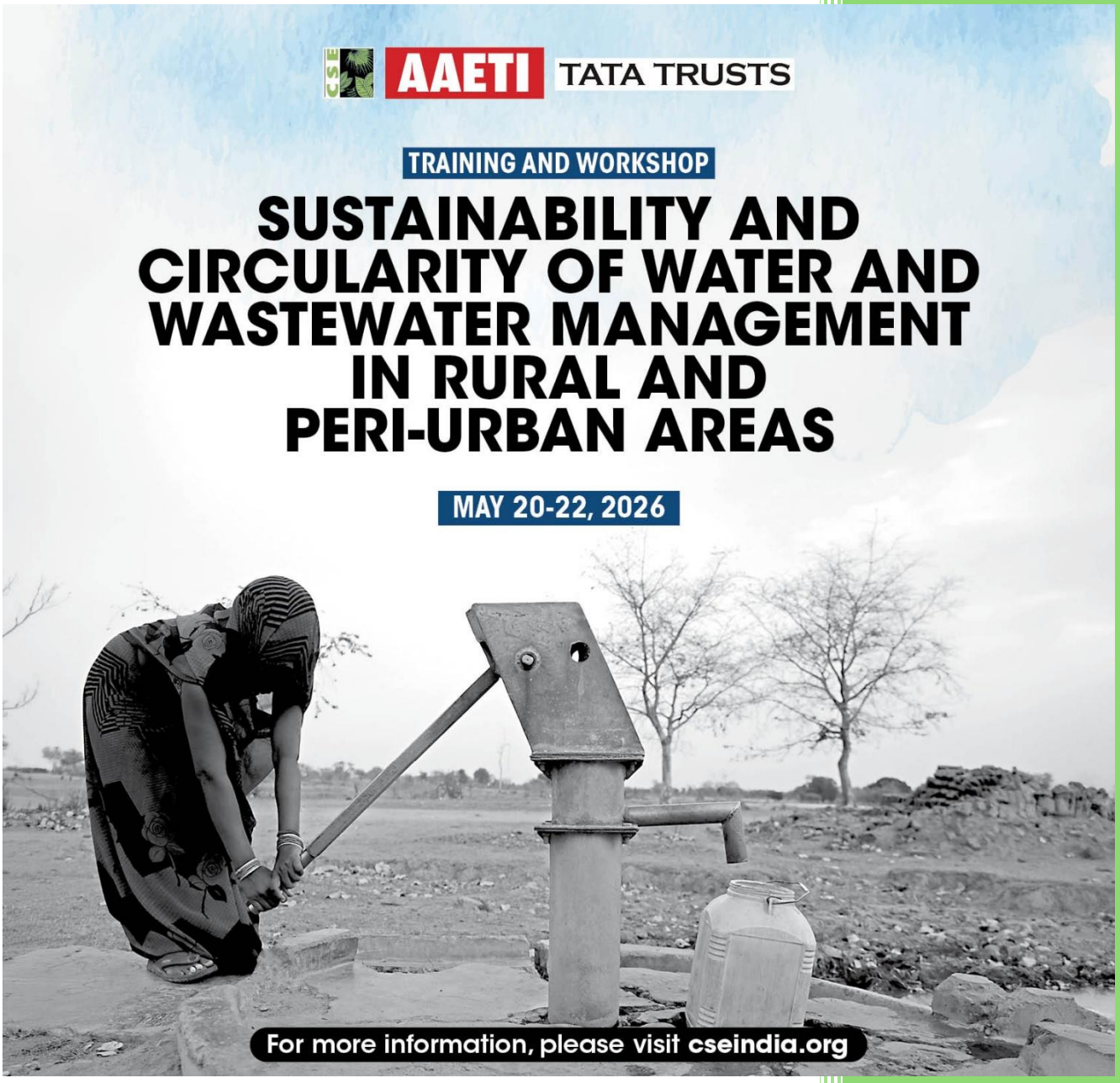

Residential Training on "Sustainability and circularity of water and wastewater in rural and peri-urban areas"

May 20 – 22, 2026

Centre for Science and Environment

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Background:

The Government of India's Jal Jeevan Mission, an ambitious programme for supplying drinking water in rural areas, has connected more than 80 per cent of households in these areas to piped water supply. The challenge now is to ensure a safe and secured water supply system – which is possible by recharging sources and managing wastewater sustainably.

To understand what is happening on the ground and to explore what is working and what is not, Centre for Science and Environment (CSE), in collaboration with TATA Trusts, has conducted comprehensive studies in select rural areas of Banda in Uttar Pradesh and Pali in Rajasthan, as well as in the peri-urban areas of Bijnor in Uttar Pradesh (since the challenges are not restricted to rural areas only). CSE and TATA Trusts are bringing the learnings and experiences from these studies in a specially curated training and workshop (see details).

PART I
TRAINING- MAY 20-21, 2026

To be conducted at CSE's state-of-the-art residential campus in Nimli, Anil Agarwal Environment Training Institute (AAETI), the two-day programme will build on the action agenda from the studies in Uttar Pradesh and Rajasthan to help the states move towards a safe and secured household water supply in their rural and peri-urban areas. The training will also focus on wastewater, its impact on water sources, the challenges of managing it, and the solutions. It will help the trainees understand the best models of fund flow, how the work of different departments and agencies of government converge, and community participation through best management practices.

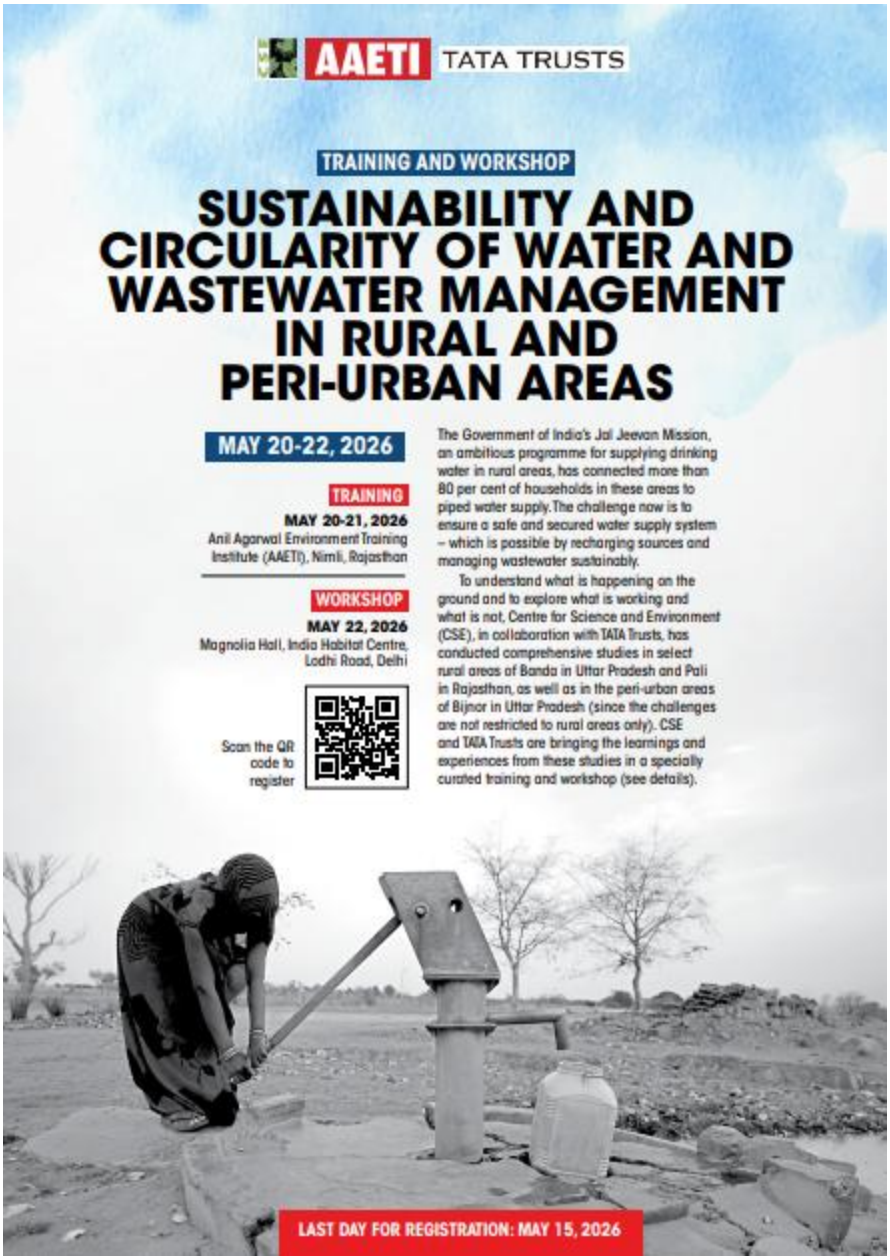
Besides lectures, interactive sessions and discussions, the training will contain pre- and post-assessment quizzes and questionnaires, classroom exercises, field visits, interactions with local communities and officials, and visits to 'live models' at AAETI to understand the working of RWH

PART II
WORKSHOP- MAY 22, 2026

A national workshop will be held in India Habitat Centre in New Delhi, following the training programme – the aim is to scale up the solutions for sustainability of water sources from the state to the national level. Besides the core group of trainees, a larger representation from different states is expected to attend the workshop.

The workshop will focus on sharing success stories on best management practices, and water-wastewater management in rural areas that are transitioning into urban. Three reports by CSE will be officially released on the occasion.

Training Flyer



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PLEASE NOTE

- Registration will not lead automatically to participation. Only those who receive a confirmation from CSE will be eligible for participation.
- The first preference in participation will be given to individuals nominated by the government.
- You may register for one or both the events.
- For nominated government officials, travel cost to Delhi and back will have to be borne by the respective nominating department/authority/state. For the rest, the travel cost to Delhi and back will be borne by the participants themselves.
- CSE will arrange the travel from CSE's main office in Delhi to the training centre (AAETI) in Rajasthan and back.
- Interested applicants can opt for any one or both the events.
- AAETI is a green residential training campus of CSE. The accommodation and meals will be arranged at AAETI for all the training participants. Participants should follow the AAETI rules during their period of training on the campus (see attached guidelines).
- There is no fee for attending the workshop.

What can we offer at the end of the programme?

- Completion certificate at the end of the programme*
- Part of CSE's training alumni under "School of Water and Waste" to access CSE's publications on water. T & C apply *
- E-alerts for CSE webinars, trainings and workshops
- CSE's E-Newsletters

*Only applicable for those attending the training programmes

For more details, please contact:

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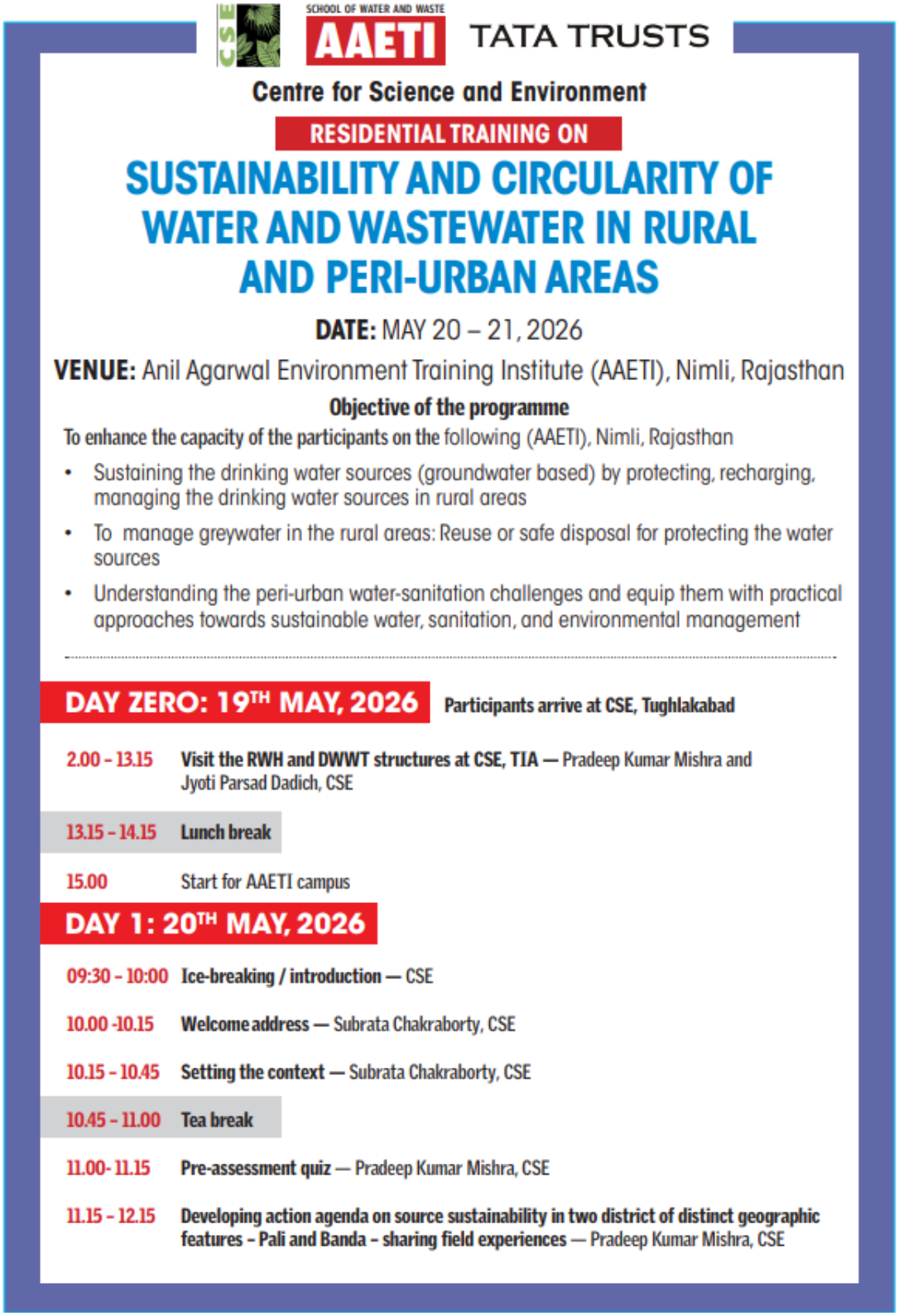
Mobile: 8085443793

CENTRE FOR SCIENCE AND ENVIRONMENT
41, Tughlakabad Institutional Area,
New Delhi – 110 062
Phone: 011-29956110, 29955124-25
Fax: 011-29955879

Training Agenda



SCHOOL OF WATER AND WASTE AAETI TATA TRUSTS

Centre for Science and Environment

RESIDENTIAL TRAINING ON

SUSTAINABILITY AND CIRCULARITY OF WATER AND WASTEWATER IN RURAL AND PERI-URBAN AREAS

DATE: MAY 20 – 21, 2026

VENUE: Anil Agarwal Environment Training Institute (AAETI), Nimli, Rajasthan

Objective of the programme

To enhance the capacity of the participants on the following (AAETI), Nimli, Rajasthan

- Sustaining the drinking water sources (groundwater based) by protecting, recharging, managing the drinking water sources in rural areas
- To manage greywater in the rural areas: Reuse or safe disposal for protecting the water sources
- Understanding the peri-urban water-sanitation challenges and equip them with practical approaches towards sustainable water, sanitation, and environmental management

DAY ZERO: 19TH MAY, 2026 Participants arrive at CSE, Tughlakabad

2.00 – 13.15	**Visit the RWH and DWWT structures at CSE, TIA** — Pradeep Kumar Mishra and Jyoti Parsad Dadich, CSE
13.15 – 14.15	**Lunch break**
15.00	Start for AAETI campus

DAY 1: 20TH MAY, 2026

09:30 – 10:00	**Ice-breaking / introduction** — CSE
10.00 -10.15	**Welcome address** — Subrata Chakraborty, CSE
10.15 – 10.45	**Setting the context** — Subrata Chakraborty, CSE
10.45 – 11.00	**Tea break**
11.00- 11.15	**Pre-assessment quiz** — Pradeep Kumar Mishra, CSE
11.15 – 12.15	**Developing action agenda on source sustainability in two district of distinct geographic features – Pali and Banda – sharing field experiences** — Pradeep Kumar Mishra, CSE

12.15 – 12.45	**Using advanced tools for mapping groundwater recharge zones in different hydrogeological regions** — Shantanu Roy, Foundation for Ecological Security (FES)
12.45 – 13.45	**Lunch break**
13.45 – 14.45	**Understanding the challenges of greywater management in Pali and Banda- solutions through safe disposal and reuse** — Swati Bhatia, CSE
14.45-15.15	**Tea break**
15.15 – 17.00	**Breaking into groups and initiating an exercise for planning for sustainable drinking water source for rural areas from different ecological regions – Developing water security plan through source sustainability in different ecological regions** — Pradeep Kumar Mishra and Swati Bhatia, CSE
17.00 -17.15	**Feedback of Day 1 and glimpses of Day 2** — Swati Bhatia, CSE

DAY 2: 21TH MAY, 2026

9.30 – 11.00	**Visiting water-wastewater features at AAETI** — Swati Bhatia, CSE
11.00 - 11.15	**Tea break**
11.15 - 11.30	**Recap of Day 1** — Pradeep Kumar Mishra
11.30 – 12.45	**Presentation of plans** — Pradeep Kumar Mishra and Swati Bhatia, CSE
12.45 – 13.30	**Lunch break**
13.30 – 14.00	**Understanding Peri-Urban Dynamics and the Underlying Hypotheses** — Sumita Singhal, CSE
14.00- 15.00	**Sharing findings from CSE's study on WASH challenges in Peri-urban areas – A case study of Bijnor, Uttar Pradesh** — Jyoti Parsad Dadhich, CSE
15.00 -15.45	**Nature-Based Solutions for Flood Mitigation, Waterbody Rejuvenation, and Wastewater Management in Peri-Urban Areas** — Gurujal (TBC)
15.45 – 16.00	**Tea Break**
16.00 – 16.45	**Faecal Sludge Management as an immediate to medium term approach to mitigate pollution abatement in Peri-urban areas** — Jyoti Parsad Dadhich, CSE
16.45 - 17.00	**Vote of thanks and certificate distribution** — Sumita Singhal CSE

For further details please Contact:

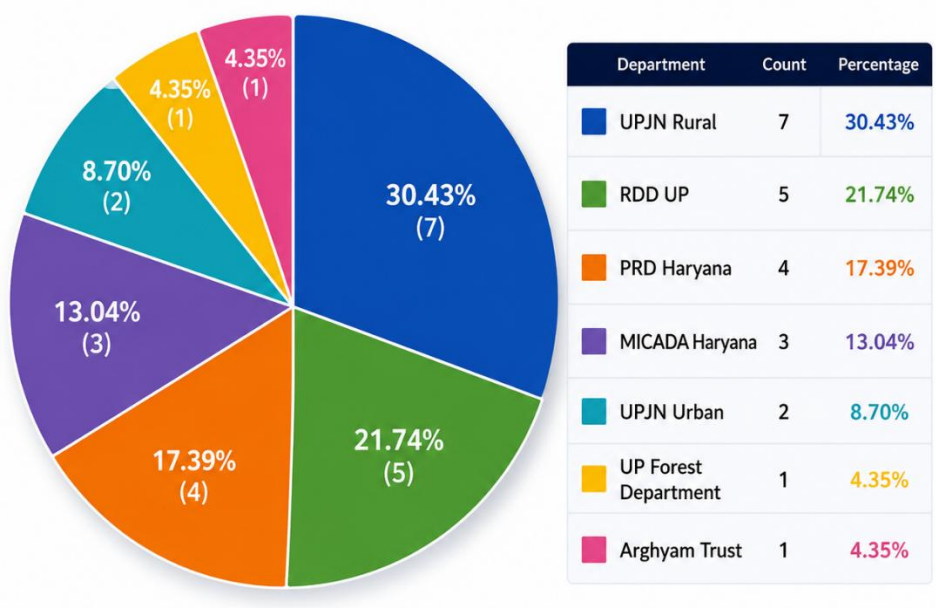
PRADEEP KUMAR MISHRA
Deputy Programme Manager,
Water Programme, CSE
Email: pradeep.mishra@cseindia.org

Participants Details

SNo.	Name	Gender	Designation	State	City	Organization
1	Gautam Bansal	Male	Junior Engineer	Haryana	Palwal	MICADA
2	Sandeep Dagar	Male	Junior Engineer	Haryana	Dabwali	MICADA
3	Rahul Sharma	Male	Junior Engineer	Haryana	Nuh	MICADA
4	Shanky Dev	Male	Assistant Engineer	Uttar Pradesh	Ghaziabad	UP Jal Nigam (Rural)
5	Chandrasekhar T	Male	DREO	Andhra Pradesh	Vijayawada	RWSS
6	Himanshu Verma	Male	Junior Engineer	Haryana	Gurugram	PRD Haryana
7	Parveen Kumar	Male	Junior Engineer	Haryana	Gurugram	PRD Haryana
8	Uzra Sultana	Female	Programme Manager	Karnataka	Bangarapet	Arghyam Trust
9	Gulshan Kumar	Male	Junior Engineer	Haryana	Bawal	PRD Haryana
10	Sachin Yadav	Male	Junior Engineer	Haryana	Dharuhera	PRD Haryana
11	Navin Chandra Sharma	Male	Assistant Engineer	Uttar Pradesh	Ghaziabad	UP Jal Nigam (Urban)
12	Ravi Kant	Male	Assistant Engineer	Uttar Pradesh	Baghpat	UP Jal Nigam (Urban)
13	Ramanuj Tripathi	Male	Additional Conservator of Forest	Uttar Pradesh	Gonda	UP Forest Department
14	Abhilash Goyal	Male	Junior Engineer	Uttar Pradesh	Maharajganj	UP Jal Nigam (Rural)
15	Pankaj Singh	Male	Assistant Engineer	Uttar Pradesh	Hapur	UP Jal Nigam (Rural)
16	Rahul Kumar Gautam	Male	Assistant Engineer	Uttar Pradesh	Jaunpur	UP Jal Nigam (Rural)
17	Satwant Singh	Male	Assistant Engineer	Uttar Pradesh	NA	UP Jal Nigam (Rural)
18	Ajay Prakash Singh	Male	Assistant Engineer	Uttar Pradesh	Maharajganj	UP Jal Nigam (Rural)
19	Mr. Kuldeep Kumar	Male	Block Development Officer	Uttar Pradesh	NA	Rural Development Department
20	Mr. Brijesh Yadav	Male	Block Development Officer	Uttar Pradesh	Gorakhpur	Rural Development Department

21	Mr. Yashwant Kumar Rao	Male	Block Development Officer	Uttar Pradesh	Ghazipur	Rural Development Department
22	Mr. Sandeep Kumar	Male	Block Development Officer	Uttar Pradesh	Kheri	Rural Development Department
23	Mr. Satish Kumar	Male	Block Development Officer	Uttar Pradesh	Maharajganj	Rural Development Department

Registration statistics



Department	Count	Percentage
UPJN Rural	7	30.43%
RDD UP	5	21.74%
PRD Haryana	4	17.39%
MICADA Haryana	3	13.04%
UPJN Urban	2	8.70%
UP Forest Department	1	4.35%
Arghyam Trust	1	4.35%

Total Nominations received - 30

Total participants attended - 23

Proceedings of the training:

Day 0 – May 19, 2026

Arrival at CSE Main office: The participants nominated for the residential training programme arrived at CSE office at Tughlakabad Institutional Area.

Day 1 – 20 May 2026

Icebreaking: Before the training programme officially starts, it is important for the participants to know each other, understand the environment and get introduced with each other to understand the fellow trainees. Since the participants came from different geographies, departments and represent different age group and gender, it is important to break the ice so that all of them get familiar with each other. The session initiated by Subrata Chakraborty, Director, Water Programme brought a cohesive moment where all the participants interacted with each other, introduced themselves with each other in a unique way.

Welcoming the participants and setting the context: Subrata Chakraborty welcomed the training participants of the training. He introduced them about CSE's and its different areas of work. Subrata explained the journey of CSE and different areas of research, capacity building, stakeholder engagement and government partnership and explained how capacity building programmes at CSE help in shaping our work and extend our research findings and technical support through such programmes. The participants were very interactive in this session, resulting in a good discussion about CSE and 3-day training programme and workshop.

Pre - assessment Quiz: An online pre-assessment quiz was run by Pradeep Kumar Mishra, where all the participants participated. This was to understand the existing knowledge of the participants and to also understand the depth required to make the training sessions more informative. The quiz resulted 6 top winners.

The formal sessions started after following the quiz.

Session 1: Developing Action Agenda on Source Sustainability in Pali and Banda

Presenter: Pradeep Kumar Mishra, Deputy Programme Manager, Water Programme, CSE

The session focused on source sustainability of rural drinking water systems in Pali district of Rajasthan and Banda district of Uttar Pradesh. The presentation explained the findings of a field study conducted in selected villages under Jal Jeevan Mission (JJM). The study aimed to understand the condition of drinking water systems, groundwater dependence, source sustainability, institutional challenges and community participation.

The presenter shared that CSE surveyed 30 villages across the two districts covering more than 580 households. Villages were selected based on hydrogeology, topography, population and JJM coverage. The study examined both single village schemes and multi-village schemes.

The presentation highlighted that despite the expansion of tap water supply under JJM, most villages still depend heavily on groundwater sources such as borewells, open wells and handpumps. In many villages, surface water-based multi-village schemes were planned, but people continued using groundwater because of irregular supply, interruptions or local preferences.

Major challenges identified during the study included declining groundwater levels, groundwater quality problems, weak community participation and poor operation and maintenance systems. In several villages, alternate water sources continued to be the main source of water even after JJM implementation.

The session also discussed differences between Pali and Banda. Pali has porous soils and lower visible wastewater accumulation, while Banda experiences high greywater generation and waterlogging because of dense soil conditions and high-water use.

The presenter stressed the importance of understanding local geology, groundwater conditions and soil characteristics before planning water and wastewater solutions. The need for better planning of greywater management, community awareness, improved drain systems and village-level participation was highlighted.

The session concluded with an action agenda that included strengthening source sustainability measures, improving groundwater recharge, enhancing community ownership, promoting proper wastewater management and improving coordination among institutions for long-term sustainability of rural water supply systems.

Session 2: Managing Greywater in Rural Areas

Presentation: Managing Greywater in Rural Areas

This session discussed the growing issue of greywater management in rural areas. The presentation explained that greywater from kitchens, bathrooms and laundry contributes nearly 60–70 per cent of household wastewater. Increasing rural water supply under Jal Jeevan Mission has also increased greywater generation.

The session explained the characteristics of greywater and blackwater and highlighted the environmental and health risks caused by improper disposal. Participants learned that unmanaged wastewater leads to dirty surroundings, mosquito breeding, contamination of ponds and groundwater pollution.

The presenter shared national-level observations from the rural water census and highlighted that a large quantity of greywater in villages is either discharged openly or enters drains without treatment. This creates waterlogging and pollutes nearby water bodies.

Several technical and institutional challenges in greywater management were discussed. These included lack of household-level treatment systems, poor drain design, absence of endpoint treatment, weak operation and maintenance systems and lack of community awareness.

The presentation compared conditions in Pali and Banda districts. Banda faces high greywater generation and frequent waterlogging, while Pali has lower visible accumulation due to sandy and porous soil conditions. It was explained that soil type, groundwater levels, land availability and settlement density should guide the choice of greywater management systems.

The session introduced different approaches for household, community and village-level greywater management. Participants were informed about soak pits, drains, wetlands and decentralized treatment systems. The need for proper planning and community participation was emphasized.

The presenter also discussed existing policy frameworks, including Jal Jeevan Mission and Liquid Waste Management Rules 2024. The importance of linking water supply planning with wastewater management was highlighted.

The session concluded by stressing that greywater should be treated as a resource rather than waste. Proper management can support groundwater recharge, reduce pollution and improve village sanitation and public health.

Group Exercise:

To develop a collaborative learning approach and brainstorming, all the participants were divided into 4 groups. Each group was given a case study, based on which they had to do the brainstorming exercises among their members and develop presentations. The presentations would contain the solutions and discussion on the case scenario given as exercises to each group. Each group did excellent brainstorming and detailed discussions.

Day 2 – 21 May 2026

Visiting water – wastewater features of AAETI: On the second day of the training, the participants were taken to the water-wastewater features of AAETI. Pradeep Kumar Mishra explained the Rainwater Harvesting features of AAETI while Swati Bhatia explained the DWWTS. They showed RWH and DWWTS features and discussed about their concept, utility, working and maintenance. The participants interacted with their doubts and questions.

Group exercises - Presentation of plans: The groups that were made on the previous day, were to present about their case scenarios and plans for sustainability and greywater management. Each group presented their part while the other groups engaged through questions and answers and interaction. This was an excellent brainstorming session where all the participants showed very active participation

and presented the detailed plans. The session was moderated by Pradeep Kumar Mishra and Swati Bhatia.

Session 3: Understanding Peri-Urban Dynamics and Underlying Hypotheses

Presenter: Dr. Sumita Singhal, Programme Manager, Water Programme, CSE

The session focused on understanding peri-urban areas and the challenges associated with rapid urbanization. The presenter explained that peri-urban areas are transitional spaces between rural and urban settlements where land use, governance systems and infrastructure are rapidly changing.

The presentation discussed global and Indian urbanization trends. It was shared that urban populations are increasing rapidly and much of future urban growth will happen in Asia and Africa. In India, peri-urban areas are expanding because of migration, infrastructure growth and city expansion.

Participants learned that peri-urban areas often fall outside formal planning systems. Many such areas lack proper governance arrangements and basic services such as water supply, sanitation and drainage. These areas may appear rural administratively but function like urban settlements.

The presentation explained key characteristics of peri-urban areas, including mixed land use, informal settlements, limited infrastructure and dependence on both rural and urban systems. Examples from Bengaluru and Delhi were used to explain how urban expansion affects surrounding villages.

The session highlighted major challenges such as unplanned growth, weak governance structures, fragmented institutional responsibilities and environmental stress. Participants were informed that peri-urban areas are among the fastest-growing yet least-planned regions.

The presenter also explained the process of integrating peri-urban areas into urban governance systems. This includes land-use changes, extension of municipal services, property mapping and infrastructure development.

The session concluded with the message that peri-urban areas require special planning and governance attention. Sustainable urbanization will not be possible without addressing water, sanitation and environmental challenges in these transitional zones.

Session 4: Water, Wastewater and Stormwater Management in Peri-Urban Bijnor

Presenter: Jyoti Parsad Dadhich, Deputy Programme Manager, Water Programme, CSE

This session presented findings from a study conducted in recently transitioned peri-urban areas of Bijnor, Uttar Pradesh. The study assessed water supply, wastewater management and stormwater systems in villages recently merged into the municipal area.

The presenter explained that Bijnor municipal area expanded significantly after the inclusion of 14 villages. However, infrastructure development has not kept pace with population growth and urban expansion.

The study covered five wards and used household surveys, focus group discussions and spatial analysis. Findings showed that most peri-urban areas continue to depend heavily on groundwater through private borewells. Water supply infrastructure remains inadequate, and supply is intermittent.

The presentation highlighted governance challenges caused by overlapping responsibilities between Jal Nigam and urban local bodies. Actual water consumption was found to be much higher than planned supply estimates.

The wastewater management assessment showed that many areas remain non-sewered. Wastewater often accumulates in ponds, empty plots and drains. In several wards, wastewater does not reach the sewage treatment plant and instead pollutes nearby land and water bodies.

The session also discussed faecal sludge management practices. Most households rely on on-site sanitation systems such as septic tanks. Desludging is mostly carried out by private operators, and untreated effluent from containment systems frequently enters open drains.

Stormwater management challenges included waterlogging, poor drain design, encroachments and weak maintenance systems. The presentation stressed the need for integrated planning of water, wastewater and stormwater systems in peri-urban areas.

The session concluded with recommendations for better governance coordination, expansion of sewerage systems, improved drainage planning and stronger operation and maintenance systems.

Session 5: Lake and Water Body Rejuvenation

Presenter: Syed Maqbool Geelani, GuruJal

This session focused on the importance of rejuvenating ponds, lakes and wetlands for ecological and water security purposes. The presenter explained the environmental, economic and social benefits of water bodies, including groundwater recharge, biodiversity conservation, flood mitigation and community well-being.

The session highlighted the increasing threats to water bodies caused by urbanization, encroachment, wastewater discharge, solid waste dumping and catchment degradation. The need for urgent restoration and protection measures was emphasized.

Participants learned about the key stages involved in pond and lake rejuvenation. These included hydrological surveys, catchment treatment, wastewater assessment, desilting, bund strengthening, fencing, landscaping and ecological profiling.

The presentation explained different types of wastewater entering ponds, including greywater, blackwater and stormwater. Appropriate treatment systems are required before wastewater enters water bodies.

Several case studies from Gurugram, Jaipur and Greater Noida were shared. Examples included constructed wetlands, bioswales, phytorid systems and community-based rejuvenation projects. The case studies demonstrated how nature-based solutions can improve water quality, biodiversity and public spaces.

The session stressed the importance of integrating wastewater treatment with pond rejuvenation efforts. Community participation, long-term maintenance and proper planning were identified as critical for sustainability.

The presentation concluded by highlighting that restored water bodies can improve groundwater recharge, support climate resilience and create healthier environments for local communities.

Session 6: Faecal Sludge Management in Peri-Urban Areas

Presenter: Jyoti Parsad Dadhich, Deputy Programme Manager, Water Programme, CSE

The session focused on faecal sludge and septage management in rural and peri-urban areas. The presenter explained the difference between sewage, faecal sludge and septage and discussed the characteristics of onsite sanitation systems.

Participants learned that peri-urban areas mainly depend on septic tanks and pit latrines because sewerage systems are limited. Unsafe disposal of faecal sludge creates serious environmental and public health risks, including groundwater contamination and pollution of rivers and ponds.

The session explained the sanitation value chain, covering containment, collection, transportation, treatment and reuse or disposal. Key challenges in each stage were discussed, including poor containment structures, irregular desludging, lack of treatment facilities and weak monitoring systems.

Different approaches to faecal sludge management were presented. These included standalone faecal sludge treatment plants, co-treatment at sewage treatment plants, deep row entrenchment and regional treatment systems.

The presentation also highlighted the technical requirements for treatment systems, including screening, stabilization, sludge drying and reuse options. The need for careful site selection and groundwater protection was emphasized.

Participants were informed about the advantages and challenges of co-treatment systems where faecal sludge is treated at existing sewage treatment plants. Such systems are useful in peri-urban areas near urban centres.

The session concluded with discussions on the importance of safe faecal sludge management for reducing pollution, protecting water resources and improving sanitation outcomes in rural and peri-urban settlements.

Post Assessment Quiz: Similar to the pre-assessment quiz, an online post – assessment quiz was run by Pradeep Kumar Mishra, where all the participants participated. This was to understand the impact of the training programme on the participants. The quiz resulted 8 top winners.

After all the sessions, a vote of thanks was given by Sumita Singhal, Programme Manager, Water Programme CSE who thanked the participants for their active participation. The participants were given prices for the pre-assessment and post-assessment quizzes and the group presentation. The prizes were given by Sumita Singhal and Shinjini Kotia from Tata Trusts. Shinjini explained about the Tata Trusts initiative on sustainability of drinking water sources and also explained about how CSE and Tata Trusts jointly worked on three different reports, which were to be released during the workshop on May 22, 2026. She also distributed the certificates to the participants.

The programme concluded with participants feedback for the training, sessions, their stay at AAETI and food.

On the next day, i.e. May 22, 2026, that participants proceeded for the workshop which was organized at Magnolia Hall, India Habitat Centre, Lodhi Road.

Day 3: Workshop on "Water and wastewater management in rural areas"

The day 3 of the event was organized as a workshop to discuss the water and wastewater management in rural areas. The workshop hosted more than 75 participants. The eminent speakers from reputed organizations and government departments brought together the discussions towards sustainability of drinking water sources and management of greywater in rural areas.

Some of the key speakers included:

a. Sunita Narain, Director General, Centre for Science and Environment, Delhi
b. Ashok K. K. Meena, IAS, Secretary, Department of Drinking water and sanitation
c. Yugal Kishore Joshi, Programme Director, Water and Land, IT & Telecom, Culture & Tourism and Lead Communication, NITI Ayog
d. Divyang Waghela, Deputy Head of Programmes, Tata Trusts

The workshop hosted the inaugural session followed by two panel discussions. The inaugural session speakers discussed about the policies, issues and initiatives towards making drinking water sources sustainable in rural areas, along with management of greywater.

In the two panel discussions, the speakers from different departments and reputed organizations discussed the emerging issues and ongoing efforts to mitigate the challenges. The panel discussion also brought in some of the good case studies from the field.

Panel 1: Greywater management solutions for protecting the water sources

The panel discussion focused on practical approaches to greywater management in rural India, linking source sustainability with household wastewater treatment and community participation. It highlighted that nearly 80% of supplied water returns as greywater, making treatment at source essential.

Rajesh Singh, Scientist, National Institute of Hydrology, Roorkee emphasized low-cost, on-site options such as soak pits, leach pits, magic pits, wetlands, phytoremediation, and biofilters, while noting that hydrogeology and soil conditions must guide design. He also warned that kitchen-garden reuse is useful but crops eaten raw should be avoided due to microbial risks.

Bharat Singh, Superintending Engineer, Hisar described Haryana's village- and panchayat-led models, including three-pond and five-pond systems, pond surveys, sludge removal, and site-based planning. He stressed that operation, maintenance, and community participation remain the biggest challenges.

Sanjay Singh, Secretary, Parmarth Samaj Sevi Sansthan, Uttar Pradesh underlined the role of village water security plans, kitchen gardens, natural treatment systems, and women's groups in sustaining greywater solutions. He also highlighted the need for monitoring, training, and stronger laboratory capacity for reliable water quality testing.

The discussion on contaminants noted concerns about chromium and arsenic, with the need for cleanup of polluted sites and better wastewater treatment to reduce groundwater contamination. Rajesh Singh also pointed out that NABL accreditation, inter-laboratory comparison, and better dashboards are important for trustworthy monitoring.

The closing remarks stressed that more water supply inevitably creates more wastewater, so planning must include wastewater management from the start. The key message was that household-level, community-driven systems are more sustainable than top-down centralized models, especially when backed by behavioral change and user accountability.

Panel 2: Securing drinking water in villages through source protection and recharge – Success stories form the states

The discussion by panel 2 framed India's water challenge as one of mismanagement, unequal allocation, and weak implementation rather than absolute scarcity. The chair noted that agriculture consumes most water, while drinking water needs are relatively small, yet rural borewell dependence and poor recharge planning continue to drain shallow sources. He also pointed to design inefficiencies, weak monitoring, staffing gaps, fragmented governance, and the need for convergence across schemes, forest planning, and water allocation priorities.

Ravi Parmar, Technical Expert, Department of Land Resources explained that watershed development under PMKSY-WDC is essentially scientific rainwater management, aimed at slowing runoff, improving percolation, and conserving both soil and water. He stressed repair of old structures, desiltation, community participation, spring-shed management, and better convergence with MGNREGA and other schemes.

The moderator highlighted repeated convergence failures at implementation level and argued for stronger district-level coordination, with the District Magistrate as the convergence anchor.

T.B.N. Singh of CGWB discussed groundwater monitoring, telemetry, data fragmentation, quality surveillance, and the need for integrated platforms and better regulation of extraction.

Rajendra Prasad, Joint Director, Watershed Development and Soil Conservation Department, Rajasthan shared Rajasthan's platform-based convergence model, where multiple departments pool funds, use GIS and aquifer mapping, and monitor outcomes; this reduced defunct handpumps and tanker dependence while improving groundwater levels.

Lalit Mohan Sharma, Advisor, Sehgal Foundation focused on water quality in affected areas such as salinity, fluoride, nitrate, and arsenic zones. He recommended source protection, aquifer zoning, recharge-based dilution, safer alternate sources, and stronger monitoring and community participation.

The closing discussion emphasized that policies and data already exist, but implementation, coordination, and public ownership remain weak. Sustainable water management, the group agreed, depends on technical planning, ecological safeguards, converged institutions, and a renewed culture of community stewardship.

For more information about the workshop, please visit the link: https://www.cseindia.org/workshop-water-and-wastewater-management-in-rural-and-peri-urban-areas-13119

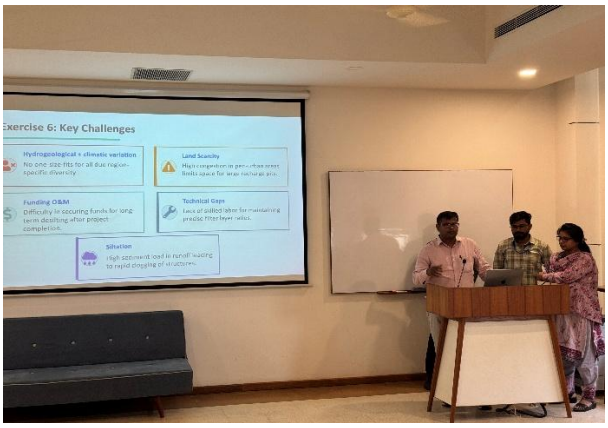
Photographs:

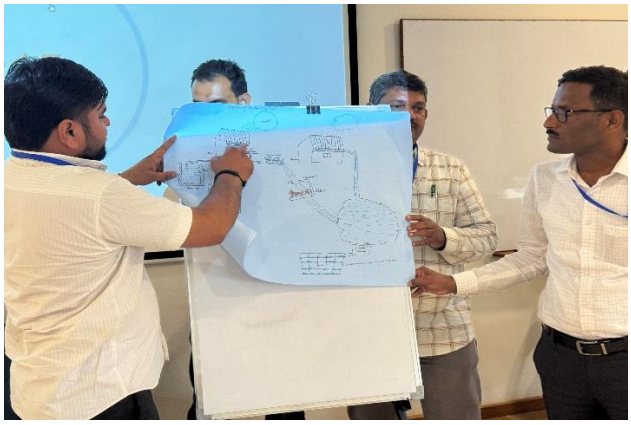
Setting the context and discussion about CSE and its work


Presentations on the field studies


Group discussion and brainstorming during the group activity


Visiting the AAETI features (RWH and DWWTS)





Group presentations by the participants

Prize distribution to the winners

Group Photo