CLEAR CUT
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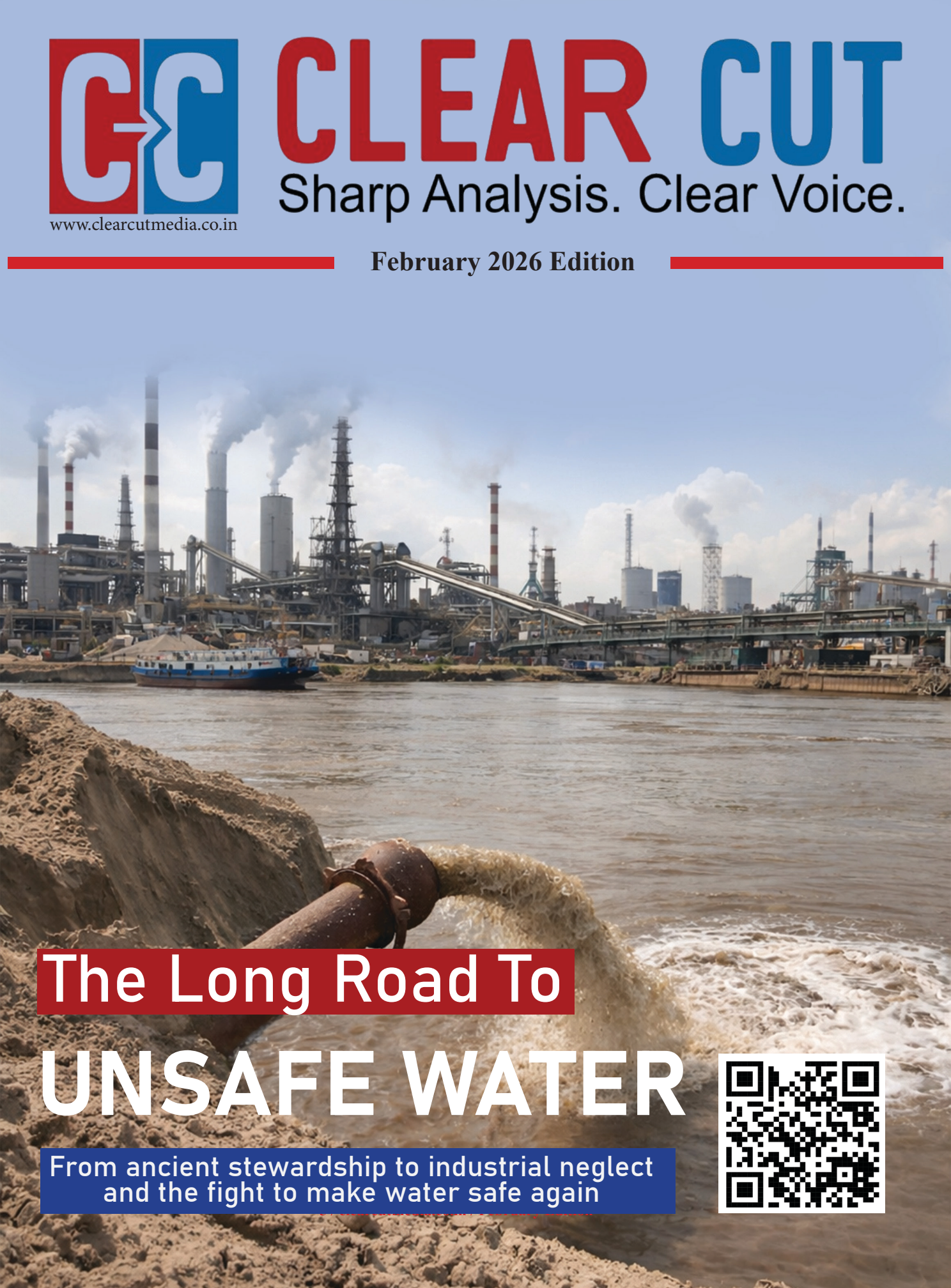
February 2026 Edition



The Long Road To UNSAFE WATER

From ancient stewardship to industrial neglect and the fight to make water safe again

अटल आवासीय वद्यिालय प्रवेश परीक्षा शैक्षणकि सत्र – 2026-27

उत्तर प्रदेश भवन एवं अन्य सन्नरि्माण कर्मकार कल्याण बोर्ड के अन्तर्गत नरि्माण श्रमकिों के हतिार्थ माननीय मुख्यमंत्री जी के स्वप्न के परपि्रेक्ष्य में स्थापति अटल आवासीय वद्यिालय ग्राम कोड़ू, तहसील सकिन्द्राबाद, जनपद बुलन्दशहर के शैक्षणकि सत्र 2026-27 हेतु कक्षा-6 एवं कक्षा-9 में प्रवेश हेतु प्रवेश परीक्षा दनिांक 22.02.2026 को आयोजति कयि जाने के उद्देश्य से अपर श्रम आयुक्त मेरठ मण्डल, मेरठ की अध्यक्षता में प्रवेश परीक्षा से सम्बन्धति बैठक आज दनिांक 07.01.2026 समय अपराह्न 3.00 बजे आयोजन कक्ष में आयोजति की गयी। बैठक का संचालन श्री अनुराग मशि्र, उप श्रम आयुक्त, गाजयिाबाद क्षेत्र, गाजयिाबाद द्वारा कयि गया।

आयुक्त महोदय द्वारा बैठक में उपस्थति सभी मुख्य वकिास अधकिारयिों को यह नरि्देशति कयि गया कि वह अपने नेतृत्व में अटल आवासीय वद्यिालय की प्रवेश परीक्षा हेतु पात्र नरि्माण श्रमकिों के बच्चों को कक्षा-6 एवं कक्षा-9 में प्रवेश हेतु पात्र (बालक/बालकिाओं) के शत-प्रतशित आवेदन कराया जाना सुनश्चिति करें।

वद्यिालय में कक्षा-6 हेतु 160 छात्र/छात्राएं एवं कक्षा-9 हेतु कुल 65 छात्र/छात्राओं के चयन हेतु प्रवेश परीक्षा का आयोजन कयि जाना है। इस हेतु उत्तर प्रदेश भवन एवं अन्य सन्नरि्माण कर्मकार कल्याण बोर्ड के अन्तर्गत दनिांक 30.11.2022 से पूर्व पंजीकृत नरि्माण श्रमकिों के बच्चे राज्याश्रति श्रेणी से सम्बन्धति वह बच्चे जो कोवडि से अनाथ हुए हैं, जनिका महलिा एवं बाल कल्याण वभिाग में पंजीयन अथवा मुख्यमंत्री बाल सेवा योजना हेतु पात्र हैं, उक्त समस्त श्रेणी के बच्चे प्रवेश परीक्षा में सम्मलिति हो सकते हैं।

कक्षा-6 हेतु बच्चे की जन्मतथिि 01.05.2014 से पहले और 31.07.2016 के बाद की नहीं होनी चाहए।
कक्षा-9 हेतु जन्मतथिि 01.05.2011 से पहले एवं 31.07.2013 के बाद की नहीं होनी चाहए।
शथिलिता एवं आरक्षण का प्रावधान नयिमानुसार देय है।
प्रवेश परीक्षा हेतु आवेदन करने की अन्तमि तथिि 31.01.2026 है।

आयुक्त महोदय द्वारा सभी को नरि्देशति कयि गया कि अटल आवासीय वद्यिालय C.B.S.E. बोर्ड के अंग्रेजी माध्यम में श्रमकिों के बच्चों हेतु राज्य स्तर पर एक अभनिव प्रयोग है। इसमें ज्यादा से ज्यादा प्रतभिाग होना एवं उसे सुनश्चिति कराये जाने की जम्मिेदारी सभी मण्डल के जलिाधकिारयिों, मुख्य वकिास अधकिारयिों एवं समस्त सम्बन्धति अधकिारयिों तथा सामाजकि संगठनों की है। वशिेषकर इनके द्वारा कोटेदार, प्रधान, पारि्षद आदि का सहयोग प्राप्त करना आवश्यक है। आयुक्त महोदय द्वारा ज्यादा से ज्यादा प्रचार-प्रसार वभिन्नि माध्यमों से भी कराये जाने के नरि्देश दयि गये हैं।

(सूर्य पाण्डेय)
सहायक श्रम आयुक्त, उप्र
नोएडा क्षेत्र, गौतमबुद्धनगर

दनिांक: 07 जनवरी 2026

Editor's *Note*

We are glad to bring you the February edition of Clear Cut, centred on water, sanitation and hygiene. The timing is not accidental. Over the past few weeks, news from central India has been deeply unsettling. In Indore's Bhagirathpura locality, sewage leaking into municipal pipes led to a wave of diarrhoeal disease and at least 10–20 reported deaths, with thousands taken ill. A recent audit also showed that Indore may be losing nearly 65% of its treated drinking water in transmission, while Bhopal loses close to half. These are not just statistics; they are a reminder that water systems fail first in the lanes where people have least voice.

Our cover story, "The Long Road to Unsafe Water", tries to step back and ask a simple question: how did we reach a point where turning on the tap can be a gamble? Across eight short chapters, we travel from rivers once treated as commons, to the slow spread of industrial and agricultural pollution, to today's urban and rural paradox where pipes have arrived but safety is still uncertain.

We look at Jal Jeevan Mission and Swachh Bharat, at recent outbreaks, and at the work of NGOs, CSR programmes and startups that are trying to rebuild trust in every glass of water.

This edition also carries a practitioner's Perspective on India's WASH journey, from big national missions to the quieter work of building systems that last. A Tête-à-Tête with a sector veteran reflects on what it takes to work with communities over decades, not projects. Our Grassroots Story follows life of a beneficiary in one of Asia's largest informal settlements.

At Clear Cut, our aim is modest: to slow things down, connect evidence with lived experience, and keep basic rights, like safe water in sharp focus. I hope this edition leaves you with sharper questions and fewer assumptions. Safe water demands sharp analysis and a clear voice, not comfort or slogans.

Regards,

Paresh Kumar

CLEAR CUT

CONTENT

FEBRUARY 2026 EDITION

Founder & Editor-in-Chief: Paresh Kumar

Production In-Charge : Minal Srivastava

Editorial Support:

Nidhi Chandrikapure, Ayushman Meena, Samiksha Shambharkar

Creative & Design: Nikhil Sharma

Support Team (Admin & Technical):

Ssanya Lamba

Printed By:

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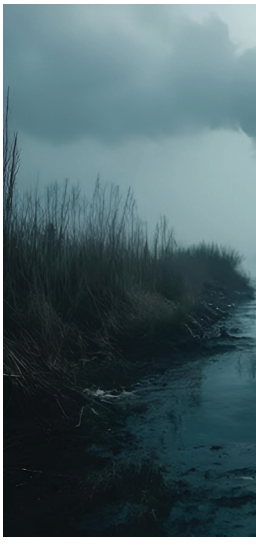


Climate Change Emerges as a Public Health Emergency in India

Climate change is increasingly driving heat stress, vector-borne diseases, and respiratory illnesses in India, public health experts warn. Reports cited by the Indian Council of Medical Research and the World Health Organization highlight rising risks for children, the elderly, and low-income communities as temperatures and extreme weather intensify.

Launch of the ILO's Employment and Social Trends 2026 Report Highlighting Stalled Job Quality and Widening Inequalities

International Labour Organization released its flagship report in January 2026, noting stable global unemployment (around 4.9%) but stalled improvements in job quality, persistent extreme working poverty (nearly 300 million people), and a massive jobs gap of 408 million. It warned of risks from demographic shifts, technology, and economic pressures undermining inclusive growth. This drew major attention to the urgent need for better labor protections, social security, and equitable work amid global changes.

Rural Women in Nepal Drive Climate-Resilient Farming

Rural women farmers in Nepal are transforming agriculture by shifting to organic inputs, climate-resilient crops, seed preservation, and collective farming models. Supported by UN-backed programmes, they are improving food security, restoring soil health, increasing household incomes, and gaining decision-making power within their communities, despite long-standing gender and land-ownership barriers.

Release of the 2026 Global Social Progress Index Showing Mixed Global Trends

In mid-January 2026, the Social Progress Index (covering 171+ countries) revealed a sobering picture: global social progress (in areas like health, education, rights, housing, and inclusion) slowed or declined in many places, with 50 countries regressing and only 36 showing significant gains. Latin America outperformed the global average in some metrics but faced uneven trajectories. This report fueled debates on whether well-being is stalling despite economic growth, stressing the need for people-centered policies to sustain social development.

US Exit from Climate Bodies Could Impact India's Climate Action

The United States' decision to withdraw from key international climate bodies may affect global cooperation on climate finance, technology, and adaptation. Experts warn India could face greater challenges securing climate support and coordinating on emissions reduction, even as it pushes renewable energy and climate resilience at home.

Privatisation and Policy Gaps Weaken India's Public Health System

Health experts warn that increasing private sector dominance, inadequate public spending, and weak regulation are undermining India's public healthcare. These gaps are leading to higher out-of-pocket expenses, overstretched primary health centres, and unequal access to care, with rural populations, informal workers, and low-income households bearing the greatest burden.

Chhattisgarh Launches New Rural Employment Guarantee Act

Chhattisgarh has introduced the Village Building and Rural Guarantee Act, 2025, guaranteeing employment and income support for rural households. The law aims to strengthen local livelihoods, ensure work availability, and boost rural infrastructure, reflecting the state's effort to expand social protection and reduce poverty in village economies.

Meta Appoints Aman Jain as Head of Public Policy in India

Aman Jain has been appointed Head of Public Policy for Meta in India, taking responsibility for strategic engagement with government, regulators, and civil society. The role will involve shaping Meta's approach to digital governance, data regulation, platform safety, and emerging technology policy in India's fast-evolving tech landscape.

India's First Government Hospital AI Clinic Opens

A fresh kind of clinic just turned on its lights inside a public hospital in India. Located at the Government Institute of Medical Sciences, Greater Noida rings in this change. Speedier diagnoses now come through artificial intelligence tools being put to work. Patient treatment gets support from smart systems learning patterns and outcomes. New medical tech finds a testing ground where specialists team up with startup creators. Progress in health services takes quiet but firm steps forward here.

Delhi Partners with SOS Children's Villages to Support Vulnerable Kids

A fresh agreement between Delhi's government and SOS Children's Villages India now begins. This partnership lasts half a decade, aiming at stronger futures. Three hundred fifty kids lacking parents stand to benefit directly. Support arrives through learning chances, medical access, meals, and mental well-being attention. Adults stepping into caregiving roles receive guidance sessions. Their efforts are reviewed often to track each child's growth. Safety grows when families take root instead of institutions. Citywide change takes shape one home at a time.

Top Companies Backing Education Through CSR in India

India's leading firms fund major education CSR initiatives. Reliance Industries leads with scholarships and school support. HDFC, Wipro, Bajaj Auto and Samsung India invest in smart classes and skills training. These projects improve schools, digital access and learning outcomes across the country. Corporate funding boosts education for underprivileged students nationwide.

Zerodha Funds Sustainability Awareness Through CSR Grant

The Sustainability Giant has received a ₹2 crore CSR grant from Zerodha. The funding will support climate education, research and public awareness campaigns. The initiative aims to simplify sustainability issues for citizens and policymakers. Zerodha said the grant reflects its commitment to long-term environmental responsibility and informed public dialogue.

Karnataka Schools Given 6 Months to Follow Mental Health Rules

Karnataka government has given schools and colleges six months to implement mental health norms. Institutions must set up counselling cells and support systems. The move aims to help students facing stress and emotional issues. Officials will guide training and reporting. All education bodies must comply to improve student wellbeing.

IIT Bombay's ATMAN 3.0 HealthTech Startup Demo Day

Thirteen healthtech startups took part in ATMAN 3.0, an eight-week sprint run by IIT Bombay's Technology Innovation Hub. Product design shared space with money planning and growth tactics during the grind. Come January 9, 2026, pitches hit the stage live in Mumbai. Funding worth at least ₹1 crore could go to those who impress. The event wraps up with founders closer to real-world launch.

Indian Startups Pivot to AI Apps After Missing Infrastructure Boom

Startups across India weren't part of the first big surge in AI hardware, led mostly by overseas leaders. By 2026, funding began flowing into AI software made for real business needs. Because homegrown engineers are skilled, new companies shape tools that solve actual problems. With time, this approach could let Indian tech grow stronger and join future breakthroughs on equal footing.

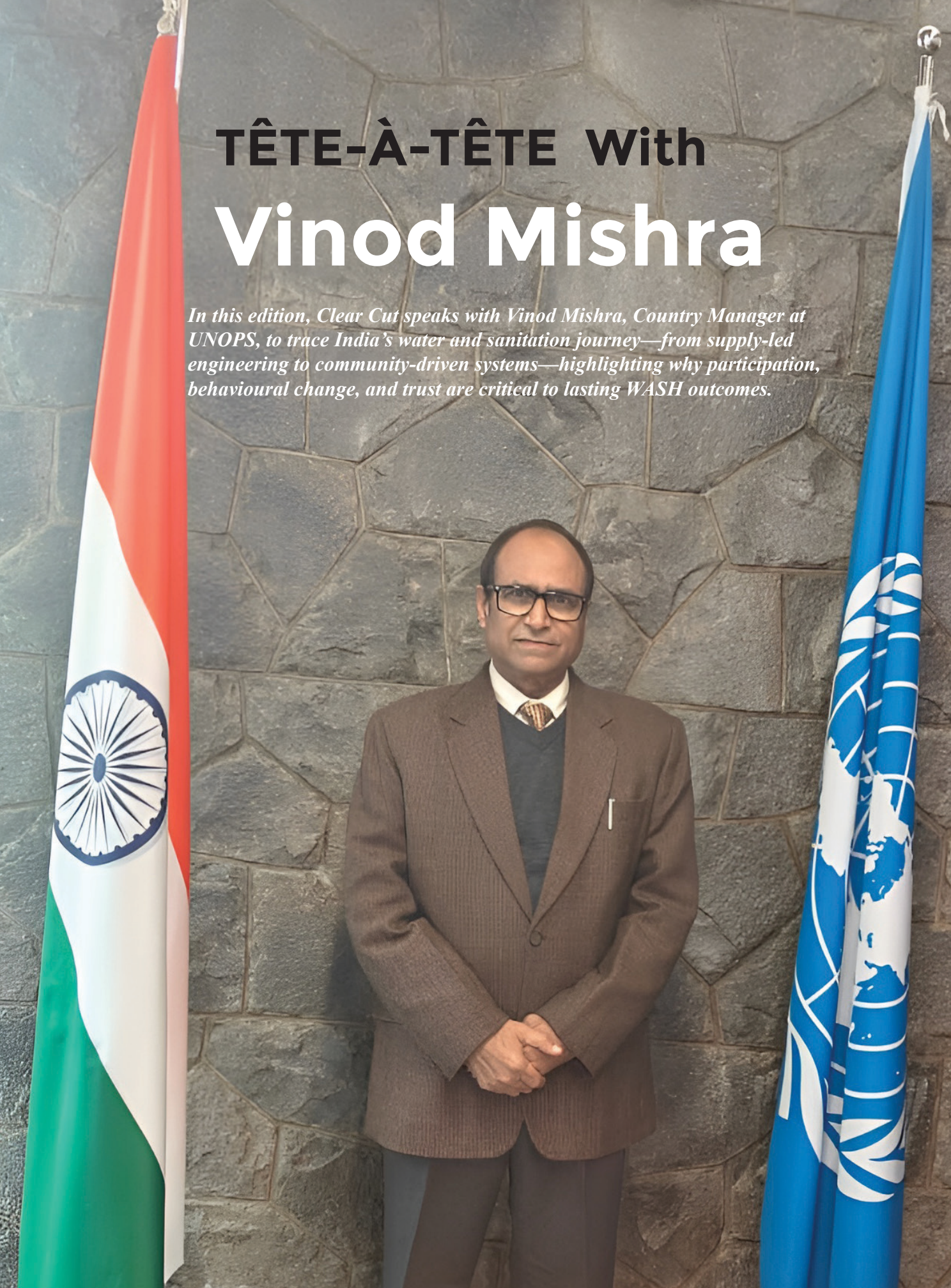
UNHCR Highlights War's Impact on Children

The UN Refugee Agency urged global action for children affected by war and displacement. It stressed that millions of young refugees face disrupted education, trauma and loss. UNHCR called for protection, schooling and humanitarian support to help them rebuild safe, hopeful lives despite conflict's deep impact.

TÊTE-À-TÊTE With

Vinod Mishra

In this edition, Clear Cut speaks with Vinod Mishra, Country Manager at UNOPS, to trace India's water and sanitation journey—from supply-led engineering to community-driven systems—highlighting why participation, behavioural change, and trust are critical to lasting WASH outcomes.



1. To begin with, what first motivated you to work in the water, sanitation, and community development sector? Was there a defining moment that shaped this journey?

I was in the UP Provincial Civil Service, and there was a World Bank–supported project called SWAJAL, a very famous project. I worked with one of my seniors who later became Secretary, Department of Drinking Water and Sanitation, and is currently working with the World Bank. He was the Director of the SWAJAL Project and suggested that I join it, saying it would be helpful for my career.

Initially, I told him that I was not an engineer and did not have a science background. At that time, I believed water and sanitation was purely an engineering field. He explained that he himself was an Economics graduate from St. Stephen's and if he could work as Director, then someone from political science and international relations could work as a project manager.

When I joined, I realized the work was more about management than engineering. Engineers worked under me, and gradually I developed a deep interest in the WASH sector. Since 1998, I have remained in this sector and never moved out.

2. Your career spans government service, World Bank–assisted projects, and now UNOPS. How has this diverse experience influenced your approach to development work?

I worked in direct government operations at the field level and then on social projects, particularly World Bank–assisted water and sanitation initiatives. SWAJAL was among the first innovative participatory projects initiated by the Government of India, with Uttar Pradesh as the first state to implement a full participatory approach in the WASH sector. This participatory approach deeply influenced me. Later, I worked at the Uttarakhand Administrative Academy as Joint Director (Training) and established the first National Key Resource Centre for Water and Sanitation within an academy.

I also worked briefly at the Institute of Development Studies (IDS), University of Sussex, with Robert Chambers, a pioneer of participatory development, known for works like *Putting the Last First.* My exposure there further strengthened my belief in participation.

Development, especially rural development, cannot succeed without community involvement. If the community does not participate in planning and implementation, real change cannot happen. Participation is the key to development.

3. Community-led and participatory approaches are central to your philosophy. Why do you believe community ownership is crucial for sustainable development?

This belief comes from my experience across different countries such as Kenya, Bangladesh, Nepal, and Cambodia. I have seen how community-led total sanitation (CLTS) effectively triggers communities and empowers them.

The essence of participation is to enable communities to assess their own situations and take action to improve their lives. If the community does not take ownership, development remains top-down and ineffective. Participation ensures a bottom-up approach and is fundamental to sustainable development.

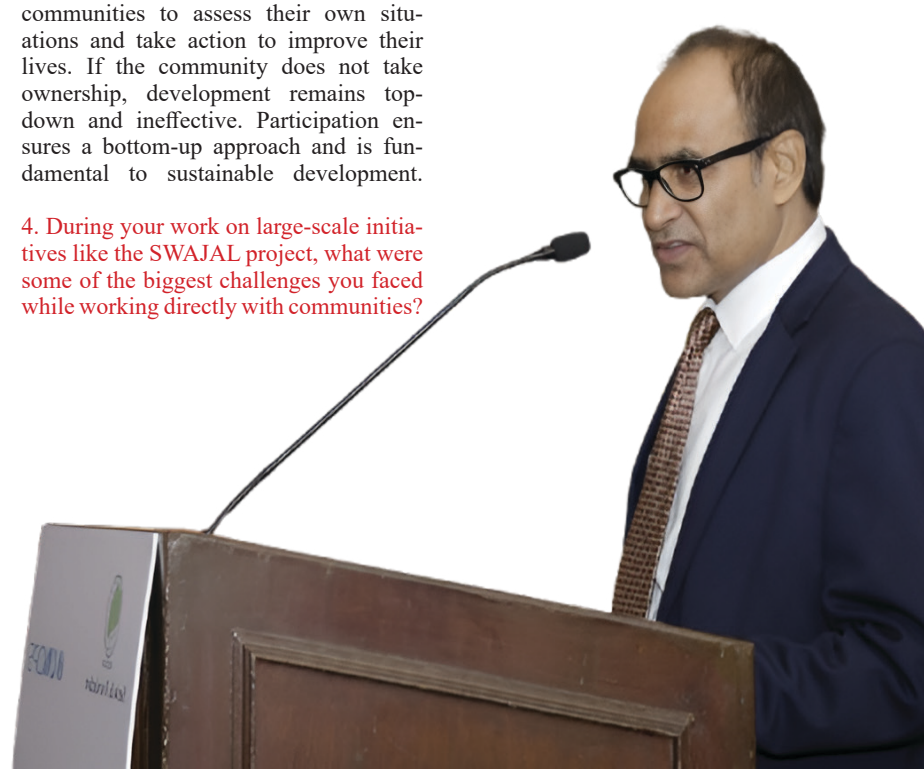
4. During your work on large-scale initiatives like the SWAJAL project, what were some of the biggest challenges you faced while working directly with communities?

SWAJAL was the first large-scale participatory project supported by the World Bank. Earlier, the government functioned entirely in a supply-driven mode—where decisions were made on behalf of communities.

SWAJAL introduced a demand-driven approach. Communities chose what they wanted—U-shaped drains, V-shaped drains, open or covered drains, hand pumps, or piped water supply. Based on their demands, projects were designed and implemented.

The community itself acted as the implementer, without contractors. Initially, government officials doubted whether communities could construct infrastructure like overhead tanks. However, communities successfully implemented schemes in over 350 villages.

The biggest challenge was implementing a demand-driven project within a system accustomed to supply-driven governance.



> *"Do not assume that higher education automatically means greater wisdom. Rural communities may lack formal education, but their practical wisdom is far greater."*

Communities also contributed 10% of the project cost, which was unique at the time.

5. Drawing from your experience at UNOPS India, can you share how policy-level planning is adapted once projects encounter local realities on the ground? Perhaps with an example.

A good example is sanitation in India. In 1985, when Rajiv Gandhi addressed the UN General Assembly, it was revealed that only 2% of India had sanitation coverage. This led to the formation of the Department of Drinking Water and Sanitation (DDWS) and the launch of the Central Rural Sanitation Programme (CRSP).

CRSP failed, and later the Total Sanitation Campaign (TSC) was launched, but even by the 2011 Census, sanitation coverage was only 32%, while official figures claimed 64%. This mismatch led to major policy introspection.

The shift came with Nirmal Bharat Abhiyan (NBA) and later Swachh Bharat Mission (SBM), which emphasized behaviour change rather than just infrastructure subsidies. Earlier, toilets were constructed but not used. Behaviour change, driven by participatory approaches, transformed sanitation outcomes. India moved from 32% to nearly 75–80% sanitation coverage due to this policy shift from supply-driven to behaviour-change-led approaches.

6. Can you share a project or initiative that you feel has had the most meaningful social impact on communities, and why it stands out for you personally?

SWAJAL remains the most impactful project of my life. It completely transformed my thinking and development perspective. I realized that communities are often more intelligent and capable than we assume.

I witnessed communities independently managing water supply systems, conducting chlorination, water quality testing, and ensuring universal access. This reinforced my belief that communities are powerful and capable of driving change when trusted and empowered.

7. Water and sanitation are often seen as technical sectors. How important is behavioural change and social engagement in making these projects successful?

Yes, many engineers believe water supply is purely technical. However, I have seen senior technical experts, like the former Chief Technical Officer of SWAJAL, transform their mindset and fully embrace participatory approaches.

When behaviour change was integrated into policy guidelines under Swachh Bharat Mission, many technical professionals began to appreciate the value of community participation. This shift in mindset is crucial.

8. In your experience, how has community engagement evolved in India over the years, especially in rural and underserved regions?

First, development must move away from supply-driven approaches, which have failed globally across sectors. Demand-driven approaches are essential.

International and UN agencies should act as catalysts—promoting community-based approaches, hiring and training people in participatory methods, and supporting governments in implementation rather than imposing solutions.

9. What role do institutions, local governments, and international organizations need to play together to ensure long-term impact rather than short-term solutions?

After SWAJAL, I transitioned from a government officer to a trainer and facilitator. I worked extensively with training academies and national-level capacity-building programs, including Training Need Assessment (TNA) under the Department of Personnel and Training.

I strongly believe that inclusive training and facilitation empower communities and stakeholders far more effectively than supply-driven approaches. The role of a facilitator is critical in achieving sustainable outcomes.

10. Looking ahead, what are the key challenges and opportunities you foresee for India's water and sanitation sector in the next decade?

India has made significant progress, especially after the launch of Swachh Bharat Mission in 2014. Cleanliness standards have improved across public spaces, railways, and airports. Piped water supply initiatives have created momentum. However, second-generation sanitation challenges—solid waste management, plastic waste, cow dung, and crop residue burning—remain critical. India needs advanced waste management technologies, many of which are used in developed countries. Given India's population of 1.4 billion, global sustainability depends heavily on India's success. Multilateral and bilateral support is essential.

11. Finally, what message would you like to share with young professionals who aspire to work in social development and community-driven initiatives?

Believe in demand-driven approaches—they work across sectors. Do not assume that higher education automatically means greater wisdom. Rural communities may lack formal education, but their practical wisdom is far greater.

Capture their knowledge, respect their demands, and plan accordingly. Break the mindset that educated professionals know better. Caring for people and valuing their lived experience is essential for true development.

India's WASH Story -

From National Missions to Sustainable Systems

Sonali Maheshwari

Water, Sanitation and Hygiene (WASH) is not only a matter of health and dignity; it is directly linked to socio-economic development like education outcomes, economic productivity, gender equality, and environmental sustainability. Within the framework of Human Development Index (HDI), access to safe drinking water and sanitation has a direct impact on life expectancy and the standard of living, making Joint Monitoring Programme (JMP) findings a crucial lens for assessing human development worldwide.

Globally recognised under Sustainable Development Goal (SDG) 6 for universal access to safe water and sanitation, WASH interventions have high public health returns while reducing disease burden, enhancing nutrition, and promoting gender equity. Over the past two decades, many countries across Asia, Africa, and Latin America have implemented large-scale WASH programmes with varying degrees of success such as Ethiopia's One WASH National Programme , Bolivia WATCH , Sustainable Urban and Rural Water, Sanitation, and Hygiene (SURWASH) Program.

India's WASH Journey in the Global Context

India's recent WASH journey, marked by unprecedented scale and innovation, stands out as one of the most significant national transformations in the global WASH landscape. India's WASH programs, Swachh Bharat Mission (SBM) and Jal Jeevan Mission (JJM), drive national efforts toward sustainable access, with SBM focusing on sanitation and JJM on safe drinking water.

Swachh Bharat Mission: Transforming Sanitation at Scale

At the heart of India's WASH narrative lies the Swachh Bharat Mission (SBM), a monumental behaviour and infrastructure programme launched on 2 October 2014

with the vision of achieving an Open Defecation Free (ODF) India. By 2019, India had constructed over 100 million household toilets and declared more than 600,000 villages ODF, a feat unmatched in scale anywhere in the world. Followed by, Swachh Bharat Mission (SBM) Phase II launched in 2020 with a ₹1.4 lakh crore outlay, it sustains Open Defecation Free (ODF) status while advancing to ODF Plus through solid/liquid waste management and visual cleanliness, targeting completion by 2025-26. Key achievements include constructing over 12 crore toilets, saving nearly 3 lakh children under five from sanitation-related diseases per a World Health Report, and declaring 3.6 lakh villages ODF Plus as of mid-2025.

Jal Jeevan Mission: Securing Rural Drinking Water

Similarly, Jal Jeevan Mission (JJM), started in 2019 with an initial ₹3.60 lakh crore outlay, provides 55 litres of clean, safe drinking water per person per day through a household tap to every rural household via functional connections, extended to 2028 per the 2025-26 Budget. Key indicators also show dramatic improvement in access to drinking water, driven by the Jal Jeevan Mission (JJM), which has enabled tap water connections to nearly 15.7 crore rural households, significantly transforming daily life and health in rural communities.

These achievements have placed India prominently within global WASH discourse:

- India's reduction in open defecation by hundreds of millions of people represents one of the largest behaviour changes in human history, according to global monitoring reports.

- The scale of sanitation infrastructure delivery and citizen engagement has become a model for developing countries, attracting international delegations to study India's approach.

Evolution of India's WASH Missions - From Infrastructure Expansion to Systems Sustainability

As India moves closer to universal coverage under both SBM and JJM, the focus of WASH programming is increasingly shifting from infrastructure creation to systems sustainability, equity, and resilience. Both missions have demonstrated a clear ability to adapt to emerging challenges such as climate stress, urbanisation, behavioural sustainability, and inclusion of vulnerable populations making them more relevant to present and future development contexts.

The Swachh Bharat Mission (SBM) has evolved from a toilet-construction campaign into a comprehensive sanitation and environmental cleanliness programme. SBM Phase II emphasises sustaining behaviour change, solid and liquid waste management, maintenance of public and institutional toilets, and cleaner villages and cities. This shift recognises that sanitation outcomes require continuous community engagement, strong local governance, and sustained financing. Greater convergence with health, nutrition, women and child development, and urban ministries has reinforced sanitation as a core determinant of public health and dignity.

Similarly, the Jal Jeevan Mission (JJM) has moved beyond rapid tap connections toward ensuring water quality, service reliability, source sustainability, and community ownership. States are adopting context-specific models, addressing groundwater stress, and integrating climate-resilient practices such as rainwater harvesting. Strengthened Village Water and Sanitation Committees reflect a shift to decentralised governance and long-term service delivery.

Both missions combine flexible, state-led implementation with campaign-mode governance, using mass communication and mobilisation, real-time monitoring, and political leadership to sustain momentum and accountability.

Advancing Gender Equality and Climate Action through WASH

Another distinguishing feature of India's evolving WASH approach is its explicit integration of gender and social inclusion, an area where global WASH programs often remain under-addressed. Evidence from WHO and UN Women highlights that inadequate sanitation and water access disproportionately affect women and girls through time poverty, safety risks, and health impacts. SBM's focus on dignity, menstrual hygiene management, and safety, along with JJM's reduction of water collection burdens, directly contributes to SDG 5 (Gender Equality) by enabling greater participation of women in education, livelihoods, and local governance.

Increasingly, both SBM and JJM are also responding to climate-related risks, aligning with SDG 13 (Climate Action).

The World Bank and WHO have emphasised that climate variability poses a significant threat to WASH infrastructure, water sources, and service reliability, particularly in water-stressed and flood-prone regions. India's focus on source sustainability, groundwater recharge, greywater management, and waste treatment reflects a growing recognition of WASH as a climate-sensitive system rather than a standalone service.

India's Global Leadership and the Way Forward

Taken together, the Swachh Bharat Mission (SBM) and Jal Jeevan Mission (JJM) represent a rare national transition from rapid infrastructure expansion to more integrated, resilient, and people-centred WASH systems. By evolving beyond access-focused delivery into broader development platforms, both missions have demonstrated how large-scale WASH programmes can remain effective and relevant over time. Their strong convergence across sectors, adaptability to diverse local contexts, and responsiveness to emerging risks such as climate variability, urban waste pressures, and behavioural sustainability have reinforced their significance in a rapidly changing socio-economic and environmental landscape.

Distinct Features | India stands out for

- Unmatched scale (hundreds of millions impacted in a decade)
- Mission-mode governance
- Behaviour change as a national movement
- Integration of WASH eith dignity, gender, and development narratives

This evolution closely aligns with global guidance from WHO, UNICEF, and the World Bank, positioning India as an important reference point for countries seeking to embed WASH within broader health, gender, and climate agendas while advancing SDG 6.

In global comparison, India's WASH journey marks a paradigm shift in how national governments can mobilise political leadership, public participation, and administrative systems for social transformation.

It demonstrates that WASH outcomes can be achieved at scale when political commitment, community mobilisation, and systems strengthening converge.

This leadership was visible at the World Economic Forum (WEF) 2025 in Davos, where India showcased its WASH innovations through a high-profile session on climate and water sustainability. The scale, speed, and visibility of SBM and JJM—combined with their emphasis on behaviour change, social norms, and accountability—have influenced global WASH discourse and informed approaches adopted by other countries and development partners. While many nations excel in specific areas such as community ownership or urban systems, India's distinctive contribution lies in proving that water and sanitation can be elevated to a national priority at scale.

Looking ahead, the next phase of India's WASH journey will depend on moving from mission-mode success to system maturity. Global experience underscores the need to institutionalise WASH within routine governance, health, and education systems; shift decisively from access to service quality and safely managed services; deepen community ownership and local accountability; address urban sanitation holistically; and embed behaviour change as a long-term social norm.

Global Experiences | Key learning areas for India

Move from campaign to system – Embed WASH deeply into routine governance, health, and education systems.

Strengthen service quality – Shift focus from access to safely managed services (water quality, sludge treatment).

Deepen community ownership – Reduce reliance on top-down messaging; strengthen local accountability mechanisms.

Address urban sanitation holistically – Learn from Latin American cities on sewerage and waste treatment models.

Institutionalise behaviour change – Move beyond awareness to habit formation and social norm reinforcement.

Together, these priorities will help ensure that India's transformative gains translate into sustainable, equitable, and resilient WASH systems delivering lasting public health and development benefits.

About the writer: Sonali Maheshwari is a senior social development professional with over two decades of experience designing and leading large-scale, multi-stakeholder programmes in India and South Asia. She specialises in behaviour change, policy engagement, and systems strengthening across child protection and safety, women's empowerment, adolescent and youth development, public health, social inclusion, and workforce wellbeing. Her work aligns closely with ESG priorities and the Sustainable Development Goals, with a strong emphasis on measurable impact, institutional accountability, and long-term sustainability.

The Jaishankar Memorial Centre:

Three Decades of Community Upliftment and Adolescent Empowerment

Taru Bahl

Monika Rathore is a resident of Madanpur Khadar, one of Asia's largest urban settlements, housing a population of over 100,000. Most residents here are migrants who make a living through daily wage income. Fathers work as hawkers, auto-rickshaw drivers and guards while mothers are predominantly engaged as domestic help or work in garment/export units.

Children in most cases work to support their families. Monika is in many ways an outlier. At 22 years of age she is pursuing her Masters' degree by correspondence and works as a freelance wall paint artist for 20-22 days a month. Most of her assignments come from agencies that handle government and corporate accounts and they hire her for outdoor media related art work.

It was not easy for her father to let her dabble in art – something he considered a waste of time and later to let her pursue higher studies when girls her age were married with kids. Little did her family know that art was not just a passion and something she was good at, but which would become a source of steady income for her.

A story that challenges stereotypes and celebrates talent

Her journey with the Jaishankar Memorial Centre (JMC) began exactly a decade ago when she was a student of class VI. It was her father who told her that she could visit JMC to find out what all they did. He had heard that they provided free tuition and extra classes on art and craft. It was the latter that struck her as fascinating, compelling her to overcome her shyness and walk into the JMC premises, which is located at one edge of Madanpur Khadar urban village. Monika credits that decision of hers as one that was life-changing.

The after-school extra classes helped her get past her fear of Maths and score well in her Xth boards. The exposure through the different activities, outdoor excursions and talks by guest faculty shaped her thought process, giving her confidence in her abilities. She recalls how during a visit to the International Book Fair she was mesmerised by the sight of thousands of books and when asked to participate in an impromptu slogan writing competition, she did so and was surprised to find she had been awarded first prize. Infact, with the exposure and encouragement she received at JMC helped her shine in her school - SKV Madanpur Khadar, where she won awards in drawing competitions every year from Grade VI to XII.

If today her family holds her in high esteem and takes pride in her achievements, she feels it is thanks to JMC field staff who constantly updated her parents on her progress and convinced them on letting her study and pursue her interests in art.

Today, Monika is one of JMC's biggest advocates. Having grown up in an economically and socially disadvantaged social environment, she understands that education is the most powerful tool for change. She believes young children especially girls can leverage education to break cycles of inequality and shape their own futures. What appears simple for any city-bred child living in a DDA colony or in private residences in the neighbourhood of Madanpur Khadar is an extremely complex task for one who lives in these makeshift settlements.

Here, getting two square meals a day is a challenge, being regular in school and managing to make the cut so they can clear their exams and be promoted to the next class an even bigger challenge. In the middle of these two extremes lie several factors like dealing with domestic violence and drunk dads; eve teasing by local goons; poor health due to starvation, malnutrition and unhygienic living conditions; and poor follow-up with school authorities for reinstatement.

Soon she hopes to rent a place in an authorised colony and move her family to a secure and respectable neighbourhood. According to her, not many girls can break out of the vicious and debilitating cycle of poverty, malnutrition, disease and unskilled and exploitative employment. What gives many girls like her hope is that JMC is there for them and that *"by having a permanent place within the urban sprawl where it conducts its activities and programmes shows they are present and consistent in their approach, offering services the community needs and guiding them on matters they have no one to turn to."*

Remedial education – salvaging many broken dreams

Several parents echo what she says and reinforce that providing a safe and non-threatening environment along with regular outreach has drawn them into JMC's fold. As a learning centre that serves as a home away from home, JMC has for over two decades worked closely with children in Madanpur Khadar village, institutionalising several programmes based on the needs of local communities.

Seeing the large number of school dropouts due to poor grades and an inability to keep pace with the classroom teaching led to the launch of the Remedial Education (RE) programme in 2005. This became a permanent feature and is managed by a dedicated team that customises education for students in classes 6 to 10. While many are supported through extra classes so they can get better scores in their Class X and XII board exams, others have sought readmission to continue their education.

The exposure children receive through related activities like the Pratham Creativity Club, summer and winter camps, reading library initiative and commemoration of special days like Diwali, Teacher's Day, Annual Day of JMC, film shows, Taekwondo classes, picnics, and periodic eye camps bring a lot of joy to them. Their spirited performances and bold articulation showcase their talents and growing confidence.

Having a regular inflow of students who enrol in its ongoing batches has also meant that there is a community that can serve as a resource for studies and interventions which are evidence-based. JMC staff has contributed to research projects in collaboration with New Concept Information Systems, UNDP, ILO, Aga Khan, NCW, Room to Read on issues around informal sector, bonded labour and gender equity.

A robust foundation creates opportunity for several offshoots

Many studies conducted by JMC provide insights into the community's emergent and evolving needs. The findings help them make changes to their own programmes and curricula so they can address challenges and gaps. It validates some of the things they are doing. Like a recent study conducted amongst adolescent girls in the 10-21 age group on "Barriers to Holistic Development of Adolescent Girls in Urban Informal Settlements", found that education, health, nutrition, safety, and self-esteem are all intertwined. It highlighted how when poverty and gender bias intersect, education becomes the first casualty, and adolescence turns into early adulthood burdened by work, caregiving and/or marriage.

The study found that nearly 38% girls dropped out of school. *"Sometimes I miss school not because I don't want to go, but because someone has to stay home,"* was a common response. Other reasons for dropping out of the formal schooling system ranged from housework, financial stress, early marriage, lack of safe transport, and, for migrant families, missing documents that block admissions. Even those who continue are enrolled in under-resourced government schools, often facing dirty toilets, indifferent teachers, or unsafe commutes. Meanwhile, brothers may study in private schools — a quiet reminder of how gender inequality plays out in daily life. Yet, many girls the researchers spoke to, still dream of becoming teachers, nurses and police officers. They see education as their path to dignity and freedom, but not without support from families, communities, and systems.

Today, JMC has expanded its outreach in 10 *mohallas* of Madanpur Khadar village, and to nearby underserved settlements such as Rajasthani Camp, Shram Vihar, and Priyanka Camp. It has successfully pretested adolescent-based teaching materials for government programmes. A partnership with Delhi Government's Gender Resource Centre (2007–2016) saw several self help groups being formed and awareness on legal aid, vocational training and adult literacy provided.

Further, community health initiatives have been implemented like a Tuberculosis Awareness Camp in March 2025 as part of support to the National TB Elimination Programme. More than 200+ families were reached and guided on screening for TB and referred to Government DOTS centres for treatment. Health camps, eye check-ups, nutrition awareness are ongoing activities. Recently as part of a project with the Catalyst Management Services, door-to-door outreach and camps helped reach 3000+ families assisting them in accessing health insurance, Labour Cards and e-Shram cards for livelihood assistance.

Expanding the network of like-minded people for expansion and replication

The JMC which was set up in 1990 as a charitable society under the Societies Registration Act 1860 was meant to be a tribute to the memory of young Jaishankar who tragically passed away at the age of 23. It has soldiered on by not creating any dependency on project based funding or by fulfilling any government mandate. It has, without any break, worked quietly but steadfastly to be relevant and meaningful with the belief that a modern city cannot progress and develop without including those who live on the periphery.

With discerning partnerships and funding from individuals who believe in the values that JMC espouses and corporates whose CSR is aligned with their beliefs, they are ensuring that one of Asia's largest urban settlements has many more success stories like Monika's.

About the Author: Taru Bahl, Independent Journalist and Communication Professional with a rich experience of working with mainstream media, the social development sector and CSR. She runs a niche content outfit Words n More Communications and is based out of Gurgaon.

Views expressed are personal and do not reflect the official position of the Clear Cut Magazine

Jal Jeevan Mission – an initiative reshaping rural water access across India

Asad Umar

With the overarching goal of achieving Sustainable Development Goal 6 and ensuring inclusive access to safe drinking water, Jal Jeevan Mission (JJM) - the flagship programme launched in 2019 has fast-tracked the process of providing individual tap water connection to every household. Conceived to bridge the rural–urban divide and improve public health outcomes, the Mission aims to provide Functional Household Tap Connections to every rural household, ensuring reliable access to adequate and potable drinking water. Since its launch on 15 August 2019, JJM has emerged as one of the impactful rural infrastructure programmes, delivering tap water to over 12.55 crore rural households and raising rural coverage to more than 80 per cent, a remarkable shift from the pre-Mission scenario, when only 16.72 per cent of rural households had tap water access.

Beyond infrastructure, the Mission's potential public health impact is profound; Nobel Laureate Michael Kremer has noted that universal access to clean and safe water through JJM could significantly reduce child mortality, with studies indicating the possibility of preventing approximately 1.36 lakh under-five deaths annually. The Mission has moved beyond being a purely infrastructure-driven programme to one that emphasises service delivery, sustainability and community ownership. Several States and Union Territories have already achieved 100 per cent rural household coverage under the Har Ghar Jal initiative, while many others are nearing saturation levels. A growing number of Gram Panchayat and villages have been formally certified as Har Ghar Jal, indicating that all households in these areas are being supplied with tap water.

India's progress under Jal Jeevan Mission is particularly significant if we look at the growing global concern over the intensifying water crisis and the slow pace of progress towards Sustainable Development Goal-6, which seeks universal access to safe water and sanitation by 2030. Global deliberations, including those at the United Nations Water Conference in 2023, have repeatedly highlighted that inadequate access to water, sanitation and hygiene remains a major contributor to disease burden and mortality worldwide. A few years back the COVID-19 pandemic further reinforced the centrality of reliable water services for public health, especially for vulnerable populations. Against this backdrop, India's steady expansion of rural tap water coverage places the country in a comparatively strong position to advance towards SDG-6.

A key feature of Jal Jeevan Mission has been its emphasis on community participation and decentralised planning. From the design stage to implementation, operation and maintenance of water supply systems, local institutions have been placed at the centre of decision-making. Village Water and Sanitation Committees (VWSCs), also known as Pani Samitis, have been constituted across the country, and Village Action Plans have been prepared to address drinking water supply, source sustainability, greywater management and routine maintenance of in-village infrastructure. This participatory approach has been critical in fostering local ownership and ensuring that schemes remain functional beyond their initial construction phase.

While groundwater continues to be the primary source of drinking water in many rural areas, its long-term availability is under increasing stress due to over-extraction, climate variability and contamination. Recognising this challenge, Jal Jeevan Mission has been closely aligned with broader water conservation and groundwater management initiatives. Programmes such as Jal Shakti Abhiyan: Catch the Rain, Atal Bhujal Yojana and the Amrit Sarovar Mission are complementing household water supply by strengthening source sustainability, promoting recharge and rejuvenating local water bodies. This convergence is essential to securing the longevity of rural water supply systems in a changing climatic context.

The Mission has also made notable progress in addressing regional disparities. In the 112 aspirational districts, which started with very low levels of tap water coverage at the time of the Mission's launch, access has expanded sharply over the past few years. This progress underscores the role of targeted investments and capacity building in bridging service delivery gaps in historically underserved regions and reflects a deliberate policy focus on equity and inclusion.

Ensuring water quality has been another core pillar of the programme. Regular testing protocols, expansion of water quality laboratories and the training of women and youth in the use of field-testing kits have strengthened local surveillance systems. The integration of digital monitoring tools and sensor-based technologies is gradually enhancing transparency and enabling real-time tracking of service delivery, helping administrators respond more effectively to operational challenges on the ground.

Beyond infrastructure and service delivery, Jal Jeevan Mission has generated wider socio-economic benefits. Improved access to safe drinking water has reduced the time and physical burden associated with water collection, particularly for women and girls, thereby contributing to better health outcomes and enhanced participation in education and livelihoods. Public investment under the Mission has also stimulated significant employment generation during both the construction and operation phases of water supply schemes, creating local economic opportunities in rural areas.

Despite its notable achievements, sustaining JJM's impact remains a challenge. As the Mission progresses towards universal coverage, emerging discussions on challenges around source sustainability, grey water management, functionality of connections and reliability of supply and water quality issues raises concerns. Addressing these challenges will be crucial to sustaining services and ensuring that reported coverage translates into real, everyday benefits for households. Nevertheless, the overall trajectory of Jal Jeevan Mission demonstrates is evolving from infrastructure creation to sustainability and integration of technology towards smart management. A policy shift from infrastructure creation to sustainable service delivery with focus on asset management, IoT-based monitoring and focus on long term operational sustainability of rural piped water supply schemes through citizen centric delivery and Jan Bhagidari.

In reshaping rural water access across India, Jal Jeevan Mission is not only advancing a critical development goal but also laying the foundation for long-term public health, social equity and environmental sustainability. Its continued success will depend on maintaining this integrated approach as the country moves from rapid expansion towards consolidation and long-term service delivery of rural water supply.

About the Author:
Asad Umar Phd, is the Director-WASH & Health with Aga Khan Foundation (An Agency of the Aga Khan Development Network)

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Reimagining Safe Water for a Viksit Bharat

Swarnalata Wankhede

Imagine a world where the simple act of turning on a tap yields life-giving water, clean, safe, and abundant. Water is not merely a substance; it is the crucial elixir that birthed life itself, nourishing ecosystems, species, and human societies alike. Blanketing approximately 71% of Earth's surface, our "blue planet" thrives because of its abundance of water.

However, the distribution of freshwater on Earth is not uniform. Approximately 97.5% of the water on Earth is saline and is found in the oceans and seas. Only about 2.5% is freshwater, with much of it trapped in glaciers, ice caps, or inaccessible aquifers, leaving less than 1% available for our needs.

India, blessed with the monsoon and major river basins, nevertheless faces acute stress from population growth, urbanisation, and intensive agriculture. According to the World Bank, India has 18% of the world's population but only 4% of its water resources.

Ensuring Water for All in Urban and Rural India

Safe water isn't a luxury; it's a fundamental human right, as affirmed by the UN's Sustainable Development Goal 6 (SDG 6): Clean Water and Sanitation. India's government has long recognised water's vital role, launching ambitious programs to ensure safe drinking water reaches every corner.

In rural areas, the flagship program under the Ministry of Jal Shakti, specifically the Department of

Drinking Water and Sanitation's Jal Jeevan Mission (JJM), launched in 2019 by Prime Minister Narendra Modi, aims for "Har Ghar Jal" (tap water in every home). JJM targets to provide functional household tap connections (FHTCs), providing 55 litres per capita per day (lpcd) of safe water. As of January 2026, the official JJM dashboard reports 81.52% coverage, 15.78 crore out of 19.36 crore rural households connected through FHTCs, up from a 16.72% baseline in 2019, marking a 64.8 percentage point increase.

Similarly, for urban India, the Atal Mission for Rejuvenation and Urban Transformation (AMRUT), launched in 2015 and upgraded to AMRUT 2.0 in 2021, focuses on water supply, sewerage, and septage management in 500 cities. The mission aimed to achieve universal water supply by providing 1.39 crore household tap connections and to increase sewerage/septage coverage from 31% to 62% through 1.45 crore new connections. AMRUT has delivered 1.12 crore tap connections and 87 lakh sewer connections, alongside the creation of sewage treatment capacity of 1,800 MLD, of which 907 MLD is currently reused. With ₹2.99 lakh crore allocated, it has provided 2.68 crore new tap connections and aims for 100% coverage by 2026. These programs reflect a holistic WASH approach. Yet, some gaps remain in both JJM and AMRUT.

The Shadows Behind the Progress

An in-depth examination of the Parliamentary Standing Committee on Water Resources (2024–25) Report highlights the following critical gaps in the JJM:

• **Financial vs. Physical Performance Gaps and Underutilisation of Funds:** The scheme has faced inconsistent fund absorption, leading to delays in physical targets. For FY 2024-25, the Budget Estimate (BE) was ₹11,711 crore, but the Revised Estimate (RE) dropped to ₹10,911 crore, with only 65% utilization (₹7,092 crore released vs. ₹10,911 crore allocated). This mismatch has resulted in a slippage of 15-20% in annual targets across 10 states, with central assistance of ₹2,000 crore unspent in FY 2023-24 due to delays in state-level execution.

• **Restoration of Public Infrastructure:** Ageing rural water infrastructure remains a bottleneck, with inadequate restoration leading to frequent breakdowns. The report notes that only 40% of pre-existing public taps (estimated 5 lakh units) have been restored under JJM, despite a target of 100% by 2024. Allocation for restoration was ₹500 crore in FY 2023-24, but actual expenditure was ₹320 crore (64% utilization), contributing to a 15% increase in water supply disruptions (affecting 8,000 villages quarterly).

• **Water Quality Issues in Rural Areas:** Contamination persists as a major hurdle, with 50% of rural water sources failing quality standards. As per the report, 2.17 lakh rural habitations (out of 5.5 lakh total) are affected by water quality issues (e.g., 1.5 lakh with excess fluoride/iron/salinity, impacting 11 crore people).

• **Sustaining Water Availability/Sources of Water for JJM:** Long-term source sustainability is challenged by over-extraction and climate variability, with 60% of schemes relying on depleting groundwater. The report indicates that only 35% of water sources (e.g., 1.5 lakh springs/rivers) have been augmented against a target of 4 lakh, leaving 65% of schemes (12 crore connections) vulnerable; in drought-prone areas, 22 states report a 20-30% decline in yield (e.g., 1.8 billion cubic meters shortfall annually). Funding for source sustainability was ₹2,500 crore in FY 2024-25, but only ₹1,800 crore was utilised, resulting in 18% of FHTCs (2.7 crore) facing intermittent supply (less than 55 lpcd).

• **Operational and Maintenance (O&M) Work:** Post-installation maintenance is severely underfunded and unmanaged, leading to high non-functionality rates. Nationally, O&M allocation is just 6% of total JJM funds (₹700 crore in FY 2024-25), but expenditure is only 45% (₹315 crore), affecting 25% of installed connections (3.75 crore FHTCs non-operational).

• **Water Quality Monitoring and Surveillance:** Surveillance is fragmented, with community participation low. The report states that only 20% of villages (1.2 lakh out of 6 lakh) have active water quality monitoring committees, and surveillance covers 40% of sources (2.2 lakh).

Similar to JJM, AMRUT continues to face several gaps that need to be addressed to fully achieve its intended targets and objectives.

• **Slow Progress and Delays in Project Implementation:** As per a 2025 Parliamentary Standing Committee report, only about 25% of approved projects under AMRUT 2.0 (₹48,050 crore out of ₹1.90 lakh crore) have been completed, with delays attributed to bureaucratic hurdles, land acquisition issues, and weak coordination between states and Urban Local Bodies (ULBs). A World Bank report on urban resilience highlights that funding for civic services under AMRUT, Smart Cities, and Swachh Bharat grew from ₹10,000 crore in 2015–16 to ₹50,000 crore in 2025–26, yet gaps in water supply coverage affect 20–30% of urban households in backward cities.

• **Limited Role and Capacity of Urban Local Bodies (ULBs):** Dominance of state government and Special Purpose Vehicles (SPVs) over ULBs is a critical gap, with ULBs handling only 30–40% of project execution despite being the primary implementers. Weak revenue generation, ULBs collect tariffs covering just 50–60% of O&M costs, leading to asset deterioration, with a shortfall in skilled staff like water engineers (shortage of 20–30% in many states).

• **Increasing Reliance on RO Water Connections in Urban Areas:** A key indicator of AMRUT's gaps in delivering safe tap water is the surge in Reverse Osmosis (RO) water purifier adoption in urban India, driven by persistent water quality issues. Residential RO connections have seen explosive growth, with the market valued at USD 682.32 million in 2024 and expected to hit USD 1,670 million by 2030 (CAGR 16.2%), as urban households (over 50% in metros like Delhi and Mumbai) opt for private solutions amid intermittent supply and contamination risks. From 2020 to 2026, urban RO penetration rose from 20–25% to 35–40% of households, fuelled by groundwater pollution and AMRUT's incomplete coverage. This trend underscores AMRUT's failure to ensure 100% safe water, pushing costs onto citizens (average RO unit: ₹10,000–20,000) and wasting 50–70% of water in RO processes.

• **Absence of integrated urban water management systems:** In India, septic tank cleaning trucks often illegally dump collected faecal sludge directly into rivers or open drains due to the absence of treatment facilities. This practice compounds pollution, with the Central Pollution Control Board (CPCB) estimating that urban sewage generation reaches 72,368 million litres per day (MLD), yet only about 28% is treated, leaving over 70% (around 52,000 MLD) discharged untreated into water bodies. A stark example occurred in Indore in late 2025–early 2026, where pipeline leaks mixed sewage with potable water, resulting in at least 10–17 deaths and over 200–3,500 illnesses from diarrheal outbreaks in affected areas. This isn't isolated; similar outbreaks hit Bengaluru (2025 cholera spike from contaminated borewells) and Delhi (2024 Yamuna foam crisis affecting taps). These issues highlight systemic deficiencies in wastewater handling, infrastructure upkeep, and enforcement, severely polluting rivers and threatening public health nationwide.

From Infrastructure to Integrated Water Security

The challenges identified in the JJM and AMRUT reflect a broader transition problem: India has largely succeeded in infrastructure creation, but now faces the more complex task of ensuring safe, reliable, and sustainable water service delivery. Addressing these gaps requires a shift from scheme-centric implementation to an Integrated Water Resources Management (IWRM) approach, endorsed by the World Bank, UN-Water, OECD, and widely adopted across successful global water systems.

• **Align Financial Flows with Physical and Service Outcomes:** Introduce performance-linked fund releases similar to the World Bank's Program-for-Results (PforR) financing model. The World Bank's Urban Water Sector Reform Program (Vietnam) linked funding to service delivery benchmarks, leading to improved fund absorption and a 20% reduction in project delays.

• **Prioritise Asset Management and Infrastructure Renewal:** Shift from ad hoc repairs to Asset Management Plans (AMPs) at village and city levels. For example, Australia's National Water Initiative institutionalised asset management planning, significantly reducing service disruptions in rural and peri-urban systems.

• **Strengthen Water Quality Governance, Not Just Infrastructure:** Move from input-based mitigation (plants, filters) to risk-based water safety planning, as recommended by WHO. For example, **Bangladesh's arsenic mitigation programme,** combining well-switching, testing, and public disclosure, reduced arsenic exposure by nearly **60%** without massive new infrastructure.

• **Secure Water Sources through Climate-Resilient Planning:** Scale nature-based solutions, rainwater harvesting, recharge structures, watershed restoration through convergence with MGNREGA and urban development funds.

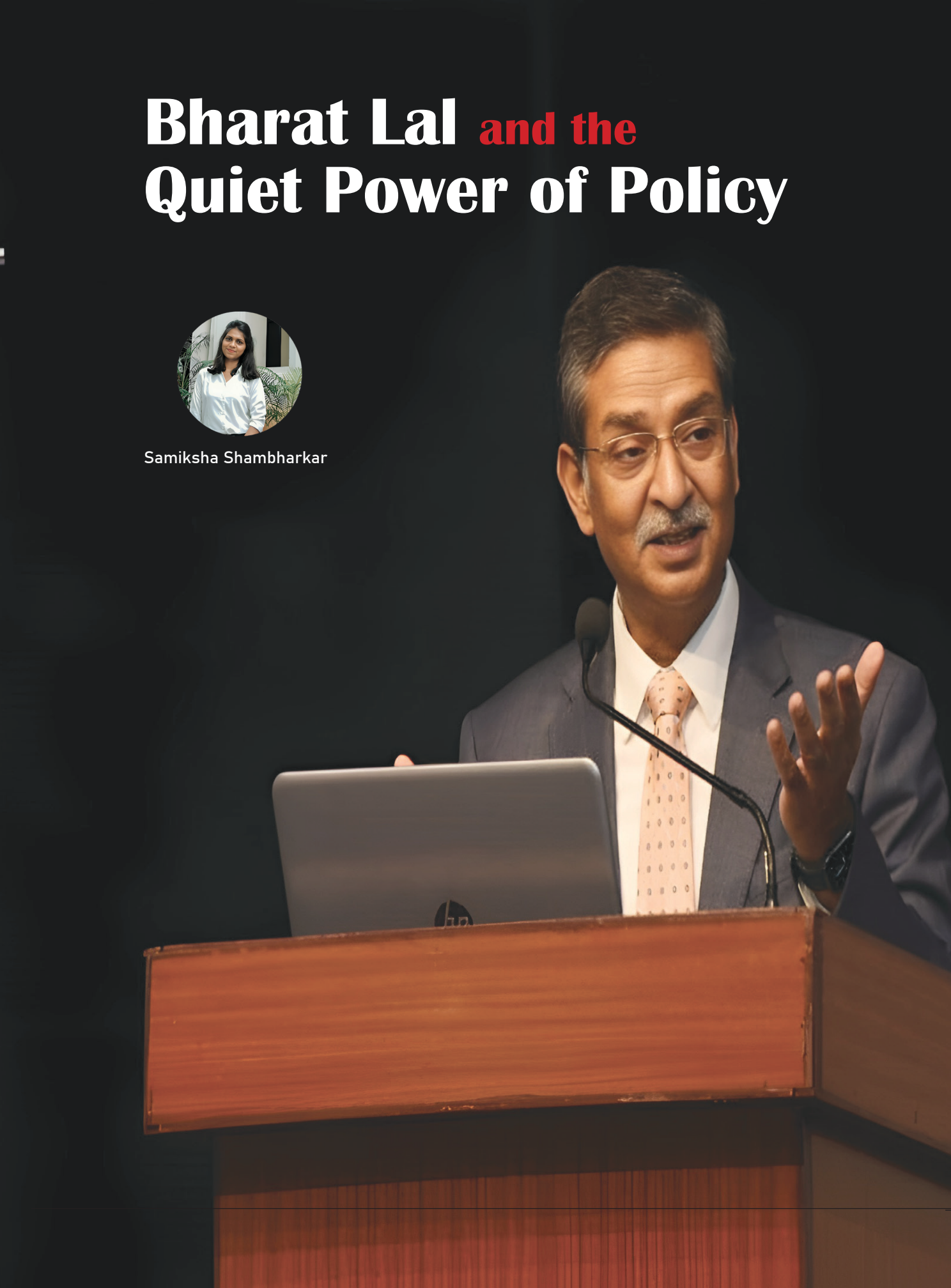
Promote treated wastewater reuse for non-potable purposes to reduce freshwater stress, especially in AMRUT cities. For example, Singapore's "Four National Taps" strategy, including recycled water (NEWater), now meets 40% of national demand, and Israel's reuse of over 85% of treated wastewater has insulated agriculture and cities from water scarcity.

Conclusion: From global scarcity to local triumphs like JJM's 81.52% coverage, progress is evident. Yet, challenges like Indore's tragedy remind us: safe water is every person's right. By bridging gaps with innovation, community spirit, and global wisdom, India can quench its thirst, fostering health, equity, and prosperity while walking on the path of Viksit Bharat. After all, in water's gentle flow lies the power to heal and unite. Let's commit to making "Har Ghar Jal" a reality for all.

About The Author
Swarnalata is an Assistant Manager (Monitoring and Evaluation) at DevInsights.

Bharat Lal and the Quiet Power of Policy

Samiksha Shambharkar



Influence frequently operates covertly in India's policy ecosystem. Instead of focusing on headlines, it moves through institutions, frameworks, and administrative decisions. The National Human Rights Commission (NHRC), India's Secretary-General and Chief Executive Officer, Bharat Lal, is a member of this tradition of modest but effective leadership. His work demonstrates a persistent attempt to link environmental responsibility, institutional learning, governance reform, and human rights.

Bharat Lal views policy as a living process that must adapt to social change, technological disruption, and environmental stress rather than as a static set of rules. He has continuously maintained throughout his career that human rights are a measure of the effectiveness of governance rather than something distinct from it.

An Institutional Role with Policy Weight

Bharat Lal is in charge of the NHRC's institutional direction, policy coordination, and administrative strategy in his capacity as Secretary-General and CEO. The NHRC was founded in accordance with the Protection of Human Rights Act of 1993 and functions at the nexus of the law, executive power, and civil society involvement.

In this capacity, Lal has attempted to broaden the Commission's purview beyond the resolution of complaints. He has increased its emphasis on thematic interventions that address structural gaps in governance, institutional capacity building, and policy advisories. The NHRC has positioned itself more and more under his direction as an organization that finds trends in human rights abuses and converts them into recommendations for systemic change.

Ground-Level Governance and Early Policy Learning

Bharat Lal's early career as an officer of the Indian Forest Service (IFoS), Gujarat cadre, 1988 batch, is a major influence on his policy philosophy. He was placed in settings by forest administration where decisions about development had a direct impact on ecological balance and local livelihoods. Long before he joined national institutions, these encounters made him aware of how policy decisions affect people.

He learned from working closely with local governments, forest-dependent communities, and environmental regulations that policies cannot be successful unless they take into consideration the lives that they affect on the ground. His later work consistently incorporates social justice, environmental sustainability, and governance accountability because of this foundation.

Strengthening Governance Architecture at the National Centre for Good Governance

Bharat Lal was the Director General of the National Centre for Good Governance (NCGG) in New Delhi prior to joining the NHRC. By educating civil servants and recording governance best practices across states and ministries, the organization plays a vital part in enhancing administrative effectiveness.

Lal advanced the Center beyond traditional training models during his time there. He placed a strong emphasis on cross-state learning, outcome evaluation, and evidence-based policymaking. He advocated for governance reform as an ongoing process based on feedback, institutional memory, and policy experimentation rather than as a one-time endeavor. This stage solidified

his position as a policy architect as opposed to a regular administrator.

Engagement with Core Policy Circles

Bharat Lal was approved for a position as Joint Secretary in the Prime Minister's Office due to his reputation as a policy thinker. This stage signaled his entry into India's central policy-making ecosystem, even though roles change over time.

Lal consistently showed that he could match institutional mandates with constitutional values throughout these assignments. He emphasized that coordination is just as important to policy effectiveness as authority, focusing on coherence across departments. His reputation as someone who could handle complexity without losing sight of the public good was strengthened by this strategy.

Human Rights as a Governance Instrument

Bharat Lal has continuously presented human rights at the NHRC as a means of enhancing governance structures rather than as discrete legal rights. He has urged the Commission to view human rights abuses as signs of more serious administrative shortcomings.

For instance, he has advocated for analyzing complaint data to find persistent institutional flaws rather than restricting responses to specific cases involving custodial justice, healthcare access, or labor rights. Policy advisories designed to stop infractions before they happen are informed by these insights. Every violation of rights, in his opinion, indicates a policy flaw that needs to be fixed.

Youth Engagement as Long-Term Policy Strategy

One of the clearest examples of Bharat Lal's forward-thinking policy approach is the NHRC's nationwide online internship program, which he launched during an official NHRC session in New Delhi. He framed the initiative as a serious engagement with future policy makers instead of just a symbolic outreach. In his speech to interns from various fields, he urged them to look at human rights in relation to artificial intelligence, climate change, gig-economy labor, cybercrime, and data protection.

This initiative showed the need for proactive governance by preparing institutions and citizens to tackle rights challenges before they become bigger issues.

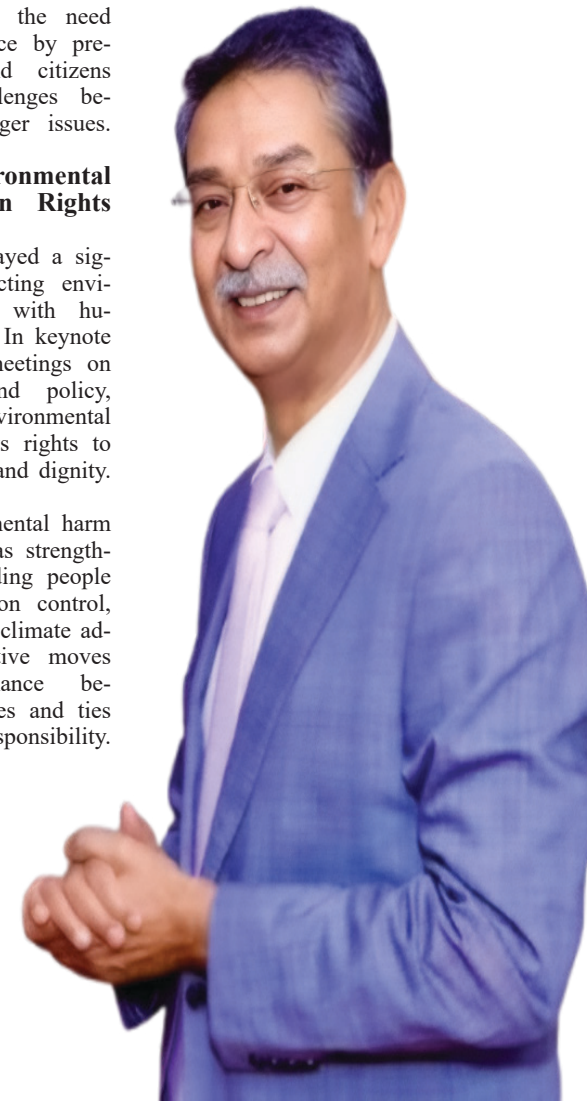
Linking Environmental Policy with Human Rights

Bharat Lal has also played a significant role in connecting environmental governance with human rights discussions. In keynote speeches at national meetings on environmental law and policy, he has argued that environmental damage directly impacts rights to life, health, livelihood, and dignity.

By presenting environmental harm as a rights issue, he has strengthened the case for holding people accountable for pollution control, land use decisions, and climate adaptation. This perspective moves environmental governance beyond just technical rules and ties it to constitutional responsibility.

Advancing Right to Water through Jal Jeevan Mission

As Additional Secretary and Mission Director of the National Jal Jeevan Mission, Bharat Lal has played a pivotal role in shaping the programme from its very inception, serving as one of its founding members of the mission. His work consistently emphasized meticulous planning, strong institutional frameworks, and community ownership as



the foundations of rural water supply. By championing local participation at every stage—from planning and implementation to operation, maintenance, and surveillance—he emphasized strengthening grassroots institutions such as Pani Samitis and communities to take charge of their own water systems. Under his stewardship, the mission evolved not merely as an infrastructure-driven programme but as a people-centric movement, guided by administrative discipline, field-level learning, and long-term resolve, with success measured in the everyday improvement of lives across India's villages.

Bharat Lal brought Jal Jeevan Mission outcomes into line with his larger policy philosophy by framing them through a human rights. This means that governance success is measured not only by coverage statistics but also by lived improvements in people's daily lives.

Gender Inclusion as Governance Reform

At international forums like the World Woman Davos Agenda, Bharat Lal has emphasized the need to boost women's participation in the workforce in India. He consistently presents gender equity as a key issue for governance and the economy rather than just a social goal. His comments underline the importance of institutional reform, covering workplace safety, legal access, childcare infrastructure, and digital inclusion.

By shifting the focus to policy design rather than individual adjustments, he promotes a systemic understanding of inclusion.

Public Communication and Policy Legitimacy

Bharat Lal views public communication as a part of governance. At official NHRC events, public lectures, and policy discussions, he avoids legal language and concentrates on outcomes that matter to citizens, such as ease of living, access to justice, and transparency. This strategy builds democratic trust. By making policy easier to understand, he reinforces the legitimacy of institutions and fosters citizen engagement. His communication style reflects the belief that governance only works when people understand and trust it.

A Consistent Model of Policy Leadership

Throughout his roles and institutions, Bharat Lal's policy leadership shows remarkable consistency. He bases policy on real experiences, anticipates future challenges, and connects governance with constitutional values. He uses institutions to promote learning instead of just enforcing rules. This consistency, more than visibility, defines him as a leader in policy.

Policy Leadership Anchored in Ethics and Institutions

Bharat Lal's career shows that effective policy leadership comes from ethical clarity and commitment to institutions. By integrating human rights into governance reform, environmental responsibility, youth engagement, and gender inclusion, he has helped shape discussions that value dignity alongside development. In a time of rapid social and technological change, his work demonstrates that the best policies are those grounded in people's lives. That is what ultimately characterizes Bharat Lal as a strong policy champion.


THE LONG
UNSAFE


ROAD TO
WATER

The Long

From ancient stewardship to

Paresh Kumar

How Ancient India Guarded Its Lifeblood

I was visiting my paternal grand parents' village in my early childhoods, sometime in the summers. This was about 40 years ago where, in the morning, I stood by a small river. At one bend in the river, a group of children were jumping into the water, bathing, and swimming. It was fun to watch them daring each other to swim farther. Barely fifty metres away, women folks stood quietly, filling earthen pots meant for drinking. Nobody tested the water. Nobody asked if it was safe. Yet everyone seemed to know which part of the river was for what.

Scenes like this were once common across India. For centuries, water did not reach homes. It was something people went to. Rivers, tanks, ponds, stepwells, and streams were not hidden behind infrastructure. They were part of everyday life. People saw them change with the seasons. They noticed when the water smelled different. They reacted when it turned unusable.

This closeness shaped behaviour. Ancient and medieval texts rarely speak of water as a commodity. According to Kautilya's *Arthashastra* (c. 3rd century BCE), water was a matter of state concern and social discipline, governed by three pillars:

- **Protecting Water Sources:** The state acted as the chief trustee of all reservoirs. Kautilya noted, "मत्स्यप्लवसंघाः सेतुषु राज्ञः स्वाम्यम्" (The king shall exercise ownership over the fish and birds in the reservoirs), ensuring they remained public assets.

- **Punishing Contamination:** Contamination was a serious offence. The law was clear: "तटाकवामनं भत्तित्वोदकमुत्सृजतः तत्रैव नमिज्जनम्"—If a person broke a dam or polluted a tank, they faced the ultimate penalty of drowning in that very water.

- **Maintaining Infrastructure:** Upkeep was a collective duty. Kautilya mandated that"सम्भूयसेतुबन्धादपक्रामतः ...न च भागं भजेत"—those who refused to help in the repair of a water-work would be denied its benefits.

Road To Unsafe Water

industrial neglect and the fight to make water safe again

Across regions, communities developed their own systems for water storage and treatment. For instance, in the west, especially in parts of Gujarat and Rajasthan, stepwells stored water during the summer months. In the south, temple tanks were popular, serving both for religious ritual and community needs. In some parts of eastern India, 'ahars' and 'pynes' regulated floods and irrigation. In the hilly regions, like Himachal Pradesh, 'kuhls' carried glacial water across villages.

Colonial gazetteers from the late 18th and 19th centuries repeatedly note the sheer number of local water bodies in Indian villages. Many British administrators, writing between 1800 and 1880, remarked that tanks and ponds were maintained not by the colonial state but by communities themselves. Repairs followed the monsoon calendar. Desilting was routine. And the idea that groundwater needed to be recharged was not expressed in modern scientific language, but it was clearly understood in practice.

When water turned industrial

By the tail end of the 1800s, local control over water began to slip away. The "control" moved from the hands of the communities, to a new kind of industrial thinking. Water was no longer the priority; it was just a byproduct of a bigger machine.

Colonial planners were obsessed with moving goods and chasing tax revenue. They threw up rail lines and bridges that sliced right through natural drainage paths—paths the land had spent centuries perfecting. Upstream, the forests—the real guardians of our rivers—were hacked down for timber, leaving the water exposed and the banks weak. The tragedy is that these changes weren't even a debate about water; they were just celebrated as "efficiency".

We stopped seeing water as a sacred trust and started treating it like a hurdle to be jumped or a tap to be turned.

What followed after Independence was not a break from this logic, but its expansion.

Around 1950s, industrial growth became central to India's idea of progress. Fertiliser factories, refineries, thermal power plants, mining operations, and chemical units started being set up along rivers and near aquifers for practical reasons. Water was available. Land was cheaper. Waste could be carried away. Cities grew around these clusters, often faster than basic services could keep up.

Waste followed.

Industrial waste was discharged into the rivers as a part of routine operation. Urban sewage flowed into drains that led straight into lakes, streams, and rivers. Agriculture added another layer, as fertilisers and pesticides seeped into soil and groundwater year after year. At the time, none of this appeared catastrophic. Rivers still flowed, borewells still worked, and when people fell ill, it was usually treated as a local problem rather than a pattern.

But patterns were forming.

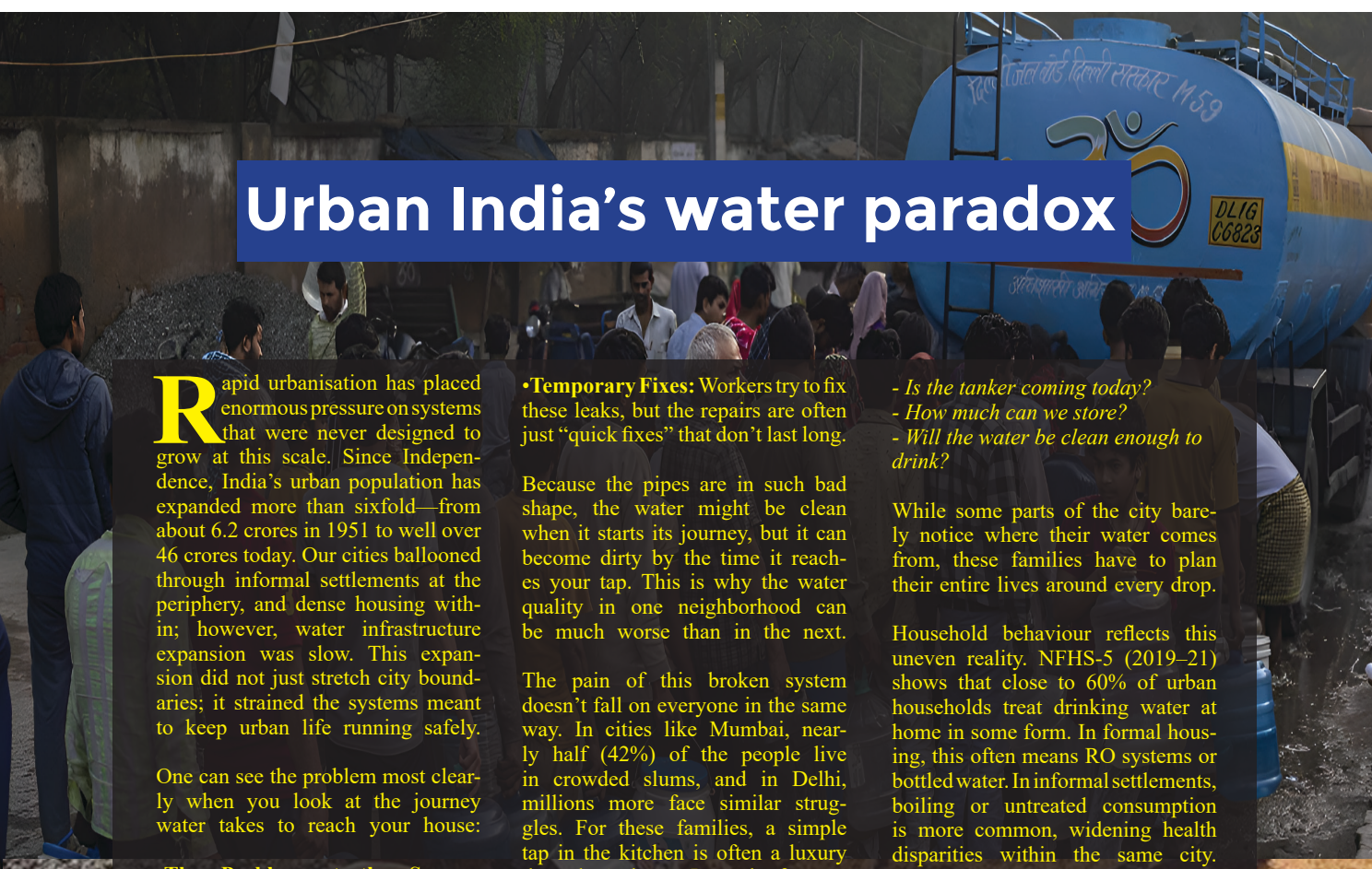
By the 1970s and 80s, we couldn't ignore the state of our water anymore—it was starting to show. You'd hear stories of mass fish die-offs near industrial belts, but the deeper crisis was hiding underground. In the farm-heavy regions of Punjab and Haryana, nitrate levels were climbing. In the thirstier, drier parts of the country, deeper drilling brought up fluoride. Then came the arsenic, creeping silently into the Gangetic plains, first in West Bengal and eventually across most of eastern India.

None of this was an accident. It was the predictable fallout of aggressive industry, intensive farming, and a gradual hands-off approach to regulation.

Our cities were part of the problem as well. We laid pipes to bring water in, but we never quite figured out where the waste should go. Even when water left a treatment plant clean, it had to run a gauntlet of aging, leaky pipes that often sat right next to open sewers. Most repairs were just band-aids. In many neighborhoods, especially in informal settlements, clean water lines and sewage channels were so tangled together that getting sick at home became almost a certainty.

The concerned agencies did put regulatory norms in place, laying out standards and procedures. Compliance was often procedural. Penalties were low enough to absorb. For a long time, contaminated water was treated as a technical inconvenience, not a governance failure.

Urban India's water paradox



Rapid urbanisation has placed enormous pressure on systems that were never designed to grow at this scale. Since Independence, India's urban population has expanded more than sixfold—from about 6.2 crores in 1951 to well over 46 crores today. Our cities ballooned through informal settlements at the periphery, and dense housing within; however, water infrastructure expansion was slow. This expansion did not just stretch city boundaries; it strained the systems meant to keep urban life running safely.

One can see the problem most clearly when you look at the journey water takes to reach your house:

•**The Problem at the Source:** The big plants that clean our water might be working well, but the real trouble starts once the water leaves those plants.

•**Old, Broken Pipes:** To reach your home, water has to travel through underground pipes that are very old—some were laid down many decades ago. These pipes are often cracked or broken.

•**Hidden Dangers:** These old water pipes often run right next to dirty drains and sewer lines. When a water pipe has a crack, dirty water from the drains can leak inside.

•**Temporary Fixes:** Workers try to fix these leaks, but the repairs are often just "quick fixes" that don't last long.

Because the pipes are in such bad shape, the water might be clean when it starts its journey, but it can become dirty by the time it reaches your tap. This is why the water quality in one neighborhood can be much worse than in the next.

The pain of this broken system doesn't fall on everyone in the same way. In cities like Mumbai, nearly half (42%) of the people live in crowded slums, and in Delhi, millions more face similar struggles. For these families, a simple tap in the kitchen is often a luxury they don't have. Instead of water flowing freely, it is something they have to wait for, fight for, or buy.

When the pipes fail or don't exist at all, the "tanker" becomes the only way to survive. In the heat of the summer, thousands of these large trucks roam through cities like Delhi and Mumbai, carrying the water that the pipes couldn't.

This isn't just a problem in a few places. From Bengaluru to Chennai and Hyderabad, the story is the same, especially for people living on the edges of the city or in poorer neighborhoods. For them, daily life revolves around a few questions:

- Is the tanker coming today?
- How much can we store?
- Will the water be clean enough to drink?

While some parts of the city barely notice where their water comes from, these families have to plan their entire lives around every drop.

Household behaviour reflects this uneven reality. NFHS-5 (2019–21) shows that close to 60% of urban households treat drinking water at home in some form. In formal housing, this often means RO systems or bottled water. In informal settlements, boiling or untreated consumption is more common, widening health disparities within the same city.

Monitoring frameworks struggle to capture these inequities. Water quality testing focuses largely on treatment plants and main supply points, not on tankers, storage, or point-of-use. Responsibility is fragmented across agencies, and failures become visible mainly during disease outbreaks.

This is the urban water paradox. Cities appear well supplied on paper, yet safety depends heavily on where one lives, how one stores water, and what one can afford.

Rural India: access improved, quality unresolved

Post-independence, the rural drinking water in India has undergone a significant transformation. Piped water connections to the households are no longer rare. According to recent government figures, over 80% of rural households now report access to piped drinking water under the Jal Jeevan Mission's Har Ghar Jal initiative, compared with far lower coverage (17% approx.) at the time of the launch of the mission. NFHS-5 (2019–21) also shows that about 95% of rural households have access to an "improved source" of drinking water, including piped connections, tube wells, or protected sources.

However, progress in access has not been matched by comparable progress in safety. Rural schemes still rely heavily on groundwater, which varies significantly in quality across regions. Contaminants such as fluoride are widespread in parts of Rajasthan, Gujarat, Telangana, and Karnataka; arsenic affects many districts in West Bengal, Bihar, Jharkhand, Uttar Pradesh, and Assam; and nitrate contamination has been noted in Punjab and Haryana due to intensive agriculture. These contaminants are uneven and often seasonal, complicating efforts to ensure safe supply.

Monitoring and testing continues to be an issue. Field Test Kits (FTKs) have been distributed widely, with over 24 lakh women trained to use them at the habitation level, and the number of water quality testing laboratories has expanded to over 2,000 at state and district levels. Yet, according one of the PIB releases, utilisation of these tools is irregular, and many habitations with known contamination still depend on unmonitored sources.

The reliance on groundwater also intersects with storage practices. Water stored in rooftop tanks or drums for long durations can degrade further, especially during warm months. As access expands, these hidden quality issues persist. The result is a landscape where infrastructure has reached most rural homes but quality assurance, monitoring, and corrective mechanisms lag behind. Access has moved forward; safety has not kept pace.

The state steps in: from SBM to JJM

The scale of India's challenge made a purely market-driven response impossible. Beginning in the 2010s, the central government launched major programmes to extend basic services — among them the Swachh Bharat Mission (SBM), aimed at eliminating open defecation and improving sanitation infrastructure across rural and urban India. SBM reoriented policy around service delivery as a public responsibility. Its rural arm, SBM-Gramin, was overseen by the Department of Drinking Water and Sanitation. This signalled a deliberate administrative link between sanitation and safe water supply. Building on this momentum, the Jal Jeevan Mission (JJM) was launched in August 2019 with the objective of providing Functional Household Tap Connections (FHTCs) to every rural household with clean, regular access to drinking water.

The Mission targets at least 55 litres per capita per day through individual tap connections, moving rural water supply away from shared or community sources. JJM's progress over the last five years has been striking in scope. At the start of 2019, only about 16.7% of rural households had tap water connections. As mentioned in the previous section, presently, more than 80% of rural households, which is over 15 crore households, are receiving piped water.

This is not just access via infrastructure and engineering; it goes beyond that. While detailed causal studies are unavailable, some of the early gains are intuitive, including:

- **Reduced drudgery:** The women no longer spend hours collecting water during peak summer months.
- **School attendance:** The girls can now go to school due to the reduction in time wasted in fetching water.
- **Household health:** With water available now at home, washing, cooking, and hygiene practices improve, reducing exposure to contaminated sources.
- **Time reallocation:** Families utilise more time for income-earning work, childcare, or study.

Having said that, the state's role today goes beyond infrastructure. Recognising that access without safety is incomplete, JJM's framework integrates water quality monitoring and surveillance through an online system called WQMIS. States have put in place over 2,800 drinking water quality testing laboratories at various levels (from state to block), and deployed Field Test Kits (FTKs) for community-level assessment.

To promote local ownership, 24.8 lakh women across more than 5 lakh villages have been trained to use FTKs and participate in routine monitoring. This reflects an official attempt to make quality verification part of community life.

Despite scale and intent, gaps remain. Coverage varies widely among states, and quality outcomes lag in many regions. But taken together, SBM and JJM represent an unprecedented state-led expansion of access and quality monitoring, anchoring safe water not just as a technical service but as a public good.

JAL


HAR GHAR JAL
Under
JEEVAN MISSION

Water should save, not kill

Safe drinking water is a basic necessity. Grand missions, large budgets and impressive dashboards sound hollow when families fall sick after drinking what should have been safe. Over the past few years, several reports of contaminated water supply have emerged from different parts of the country, drawing attention to a problem that rarely makes national headlines.

When people get sick from their own taps, we should be asking two simple things: what happened, and who let it happen? We hardly get this. Instead, we get a familiar story. Problems identification takes too long, the information is dripped out in parts and tiny doses, and the blame is shifted onto individual homes rather than the systems that failed them. We can't keep sweeping this under the carpet. Concerned agencies need to be honest about how sewage water is getting into our cups and glasses, what they're doing to fix it right now, and when they'll actually finish the job. Without that, "accountability" is just a buzzword.

Look at Bhagirathpura in Indore, neighborhood that became a cautionary tale. A sewage leak hit an old, rusted water line, and the results were devastating: two people died and dozens ended up in hospital beds because of bacterial contamination. It's not just an Indore problem, either.

In Ahmedabad, the city's own records are buried under hundreds of thousands of complaints about foul-smelling water. It's no coincidence that these complaints are followed by spikes in jaundice and diarrhea. Across smaller towns in Gujarat and Rajasthan, the story repeats every monsoon: old drains overflow, systems get overwhelmed, and the local clinic fills up.

Government auditors have been sounding the alarm on these structural cracks for years. Some reports show that cities like Indore and Bhopal are literally bleeding water—losing up to 65% of their treated supply to leaks and illegal taps. Engineers call this "non-revenue water," but for the rest of us, it's a massive safety risk. When pipes lose pressure because of these holes, they don't just leak water out; they suck contaminants in. An auditor might not put a name on a death certificate, but the math is clear: broken pipes are killing people.

Multiple departments and agencies are working hard to expand coverage, maintain networks, test samples and respond to complaints. Yet without routine monitoring, clear communication, and firm accountability, deaths linked to contaminated water remain a standing risk rather than an unfortunate anomaly.

How NGOs and CSR are moving the needle on safe water

In many parts of India, communities and community-based organisations have stepped into the breach where formal systems have faltered. Not out of charity but necessity. When drinking water turns unreliable or unsafe, local groups and non-governmental organisations organise testing, repairs, monitoring, and source protection with limited resources. In districts of Bihar and Uttar Pradesh, for example, water and sanitation committees use simple field test kits during the monsoon to check for bacterial contamination, sharing results with gram panchayats and block engineers. These grassroots efforts show mettle even when larger systems lag.

Some organisations work at scale. WaterAid India reports that its programmes have reached over 3.7 million people with safe water and nearly 10 million with sanitation services across the country. The NGO's work blends hardware — wells, pumps, filters — with community mobilisation and hygiene education, bridging gaps between policy and practice. In Rajasthan, the Tarun Bharat Sangh, under Rajendra Singh's leadership, has helped communities construct more than 14,000 johads (traditional earthen dams) and rejuvenate 13 rivers, reinforcing sustainable groundwater management.

Other groups combine conservation with measurable impact. In Coimbatore, Siruthuli's desilting of tanks and rainwater harvesting drives are credited with raising the city's groundwater table by over 13 metres in places over two decades, strengthening resilience to seasonal scarcity.

CSR programmes have also begun to move the needle on water safety. For instance, the Reliance Foundation's Water Security and Watershed Revival Programme has helped create or restore more than 15,300 water harvesting structures, contributing to water security for over 20 million people in semi-arid regions. Under Hindustan Unilever's Project Prabhat, 26 of 28 factories in India operate on Zero Liquid Discharge, recycling 100% of wastewater and reducing pressure on local sources.

These interventions — whether community tests, traditional recharge structures, or CSR-funded monitoring — do not replace the responsibility of the government departments. But they demonstrate that safe water is not delivered by infrastructure alone; it is sustained through vigilance, collective action, and partnerships that break the mould of passive expectation and hold systems to account.

The future arrives quietly, then all at once

We usually think of drinking water as a world of heavy iron pipes, pumps, and those massive, rusting tankers. It's "engineering stuff." But the center of gravity is shifting. The next decade isn't going to be about laying more iron; it's going to be about the data moving through it.

You can see this shift in municipal control rooms in cities like Pune. It's not particularly high-tech to look at—just a few guys at desks with monitors showing a map of the city's reservoirs. But the impact is real. When a sensor flags a drop in chlorine or a weird pressure spike, it shows up right there on the dashboard. It allows the staff to call the ward office and fix a pump or check for a leak immediately, instead of sitting around waiting for a resident to call and complain. Instead of waiting for a citizen to call in with a complaint or a health report, they can alert the local ward office to check the dosing pumps or look for a leak. It's a basic change in workflow—moving from reacting to problems to spotting them on a screen—but it's a lot more effective than flying blind.

Gradually, these tools are becoming the new normal. We're seeing chlorine sensors, handheld meters, and pressure loggers tucked away near old junctions. Some spots even use simple SMS alerts to tell a community when the tanks are dry. None of this is a silver bullet, but it stops us from flying blind.

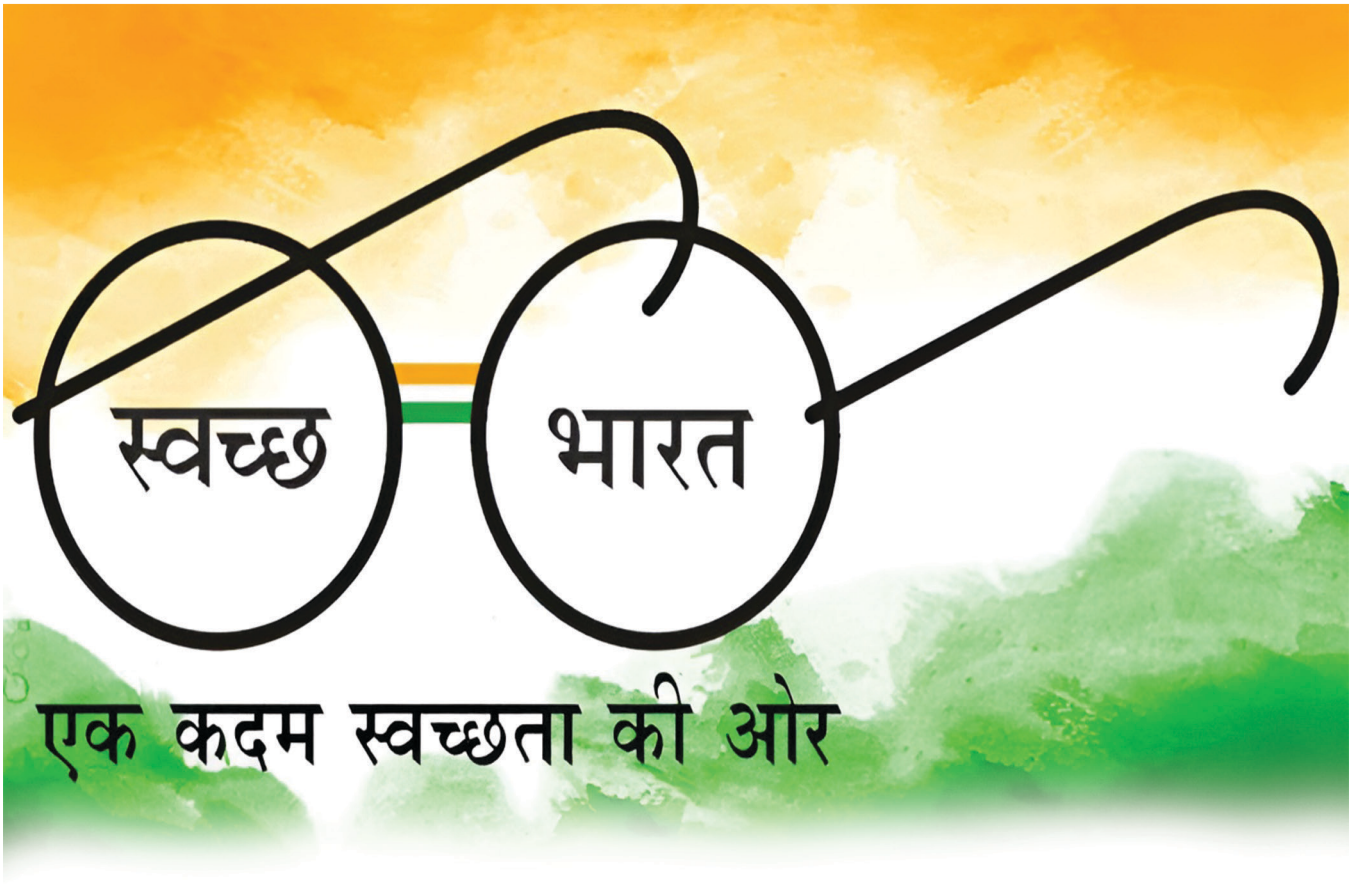
The real hurdle isn't the technology, though. It's the culture. Most municipalities are stuck in a "firefighting" loop: wait for the complaint, then send the truck. By then, the damage is already done. We have to flip that. It means testing on a strict schedule (even when things seem fine), publishing the results where people can actually see them, and responding to a risk before it becomes a crisis.

It also comes down to trust. We need those "uncomfortable" third-party teams—the labs, the NGOs, the researchers—to double-check the numbers and ask the hard questions. It keeps the system honest. As an engineer once told me: "Not falling sick isn't a strategy. It's just luck until you test the water."

The government still has to be the one in charge, but they have a lot more company now. With auditors, NGOs, and researchers all looking at the same data, the goal changes from firefighting disasters to preventing them. India's relationship with water has gone through a massive, messy cycle. We started with communities that treated rivers as sacred. Then, during the industrial push, water was just something to be used for steel and power—and that's when the pollution really set in. We built the pipes, but we didn't always keep them clean.

That's why today's move toward monitoring is so important. We're finally learning to actually track the water, not just shove it through a pipe. It's slow, boring work involving sensors and reports, but it's how you bridge the gap between an old system and what people expect today. This story has looked at a long, uneven road—from ancient traditions of ownership to industrial neglect. The fix doesn't require a miracle. It just requires the boring stuff: regular testing, clear logs, and people being held accountable.

Safe water is not rocket science. It is routine. And routine is built one day at a time.



Certified Clean: Assessment Architecture of Urban Sanitation

Nidhi Chandrikapure

Over the past ten years, India's urban sanitation system has experienced a dramatic shift from a narrow concentration on infrastructure availability to a broader emphasis on performance, accountability, and quantifiable outcomes. Cleanliness is increasingly viewed as a governance parameter influenced by certifications, indicators, and third-party evaluations rather than just a public health goal. This article analyses how national sanitation frameworks have institutionalised cleanliness through large-scale verification procedures and standardized protocols, under the Swachh Bharat Mission (Urban) and especially its latter phase. It highlights the opportunities and conflicts inherent in assessment-driven sanitation governance, particularly with regard to equality, sustainability, and the day-to-day reality of providing urban services.

Introduction: From Swachh Bharat Mission (Urban) to SBM-U 2.0

One of India's most significant urban governance initiatives was the Swachh Bharat Mission (Urban) [SBM-U]. It was introduced in 2014 with the goal of turning sanitation from a neglected municipal function into a national development priority. The three main goals of the mission were to achieve- 1) 100% Open Defecation Free (ODF) status, 2) Guaranteeing scientific solid waste management (SWM), 3) And promoting sustainable behaviour change through a Jan Andolan by October 2, 2019, across all statutory towns.

Funding Component	Amount (₹ crore)	Description
Total Mission Outlay	62,009	Total financial allocation for SBM-Urban
Government of India (GoI) Share	14,623	Central government contribution
Minimum State Share	4,874	Mandatory contribution by States/UTs
Funds from Other Sources	42,535	To be mobilised through individual beneficiary contribution, Public–Private Partnerships (PPP), and other sources

Image Source: Author

Significant results were achieved by SBM-U, particularly in waste management and access to sanitation. According to official government records of SBM, by 2019, 4,371 of 4,372 Urban Local Bodies had been designated ODF, thanks to the building of 6.40 lakh seats in community and public restrooms and 66.86 lakh individual family restrooms. Additionally, the data recorded that in solid waste management, door-to-door garbage collection reached 97% of urban wards, source segregation reached 85%, and treatment capacity rose from 26,000 tonnes per day (18%) in 2014 to approximately 1 lakh TPD (70%). Notably, more than 90,000 unorganised waste workers were integrated into official waste management systems, enhancing employment prospects, particularly for urban poor women.

Despite these successes, independent evaluations by NSSO (2018) and NITI Aayog (2021) revealed enduring issues, including the need for long-term behavioural change, legacy dumpsites, insufficient treatment of faecal sludge, and the management of plastic and construction debris. These results demonstrated that sanitation systems were unequal, environmentally vulnerable, and capacity-constrained even though access targets had been mostly met.

To institutionalise achievements and cover the full sanitation value chain, the Mission was expanded as Swachh Bharat Mission (Urban) 2.0 (2021–2026). The goal of a Garbage-Free Urban India, which includes the safe containment and treatment of wastewater and faeces, the cleanup of legacy waste, the reduction of single-use plastics, and increased public participation, is given top priority in SBM-U 2.0. SBM-U 2.0 represents a significant shift in India's urban policy framework, aligning with SDG 6 and SDG 11, from symbolic cleanliness to systems-based, sustainable urban sanitation.

Third-Party Assessments and Standardised Protocols

The Ministry of Housing and Urban Affairs (MoHUA) has established standardised sanitation procedures that are assessed by impartial third parties to maintain an Open Defecation Free (ODF) status and prevent slippage. Beyond the provision of infrastructure, these guidelines establish precise evaluation criteria to measure sanitation outcomes. According to the standardised protocols, assessment criteria consist of as given in the table.

Assessment Category	Assessment Criteria
ODF+	• Functionality and routine maintenance of community and public toilets (CT/PTs) • Adequate operation and maintenance (O&M) systems to ensure continued usage • Provision of accessible, child-friendly, and gender-sensitive sanitation facilities
ODF++	• Safe containment of faecal waste at the source • Mechanised evacuation and regulated transportation of faecal sludge • Treatment and processing of sludge through authorised treatment facilities • Prevention of discharge of untreated faecal sludge into open drains, water bodies, or open spaces
Water+	• Safe collection and treatment of wastewater • Prevention of discharge of untreated wastewater into the environment or water bodies

Image Source: Author

SBM ODF+ and ODF++ Certification Toolkit and Protocol

The Ministry of Housing and Urban Affairs (MoHUA) released a comprehensive toolkit and official protocol for Indian cities seeking to progress from Open Defecation Free (ODF) status to the more rigorous SBM ODF+ and SBM ODF++ certifications. It establishes clear definitions and mandatory infrastructure requirements, focusing on the functionality and cleanliness of public toilets for ODF+ and advanced waste management for ODF++. Under the SBM ODF++ criteria, Urban Local Bodies must demonstrate

the safe containment, transport, and treatment of all faecal sludge and sewage. The toolkit outlines a rigorous declaration process involving various stakeholders, including schools, self-help groups, and local representatives. Verification is conducted through third-party inspections, including surprise audits and geo-tagged physical observations, to ensure long-term sustainability and reliability. These protocols aim to shift the national focus from merely building toilets to achieving holistic and sustainable urban sanitation for all citizens.

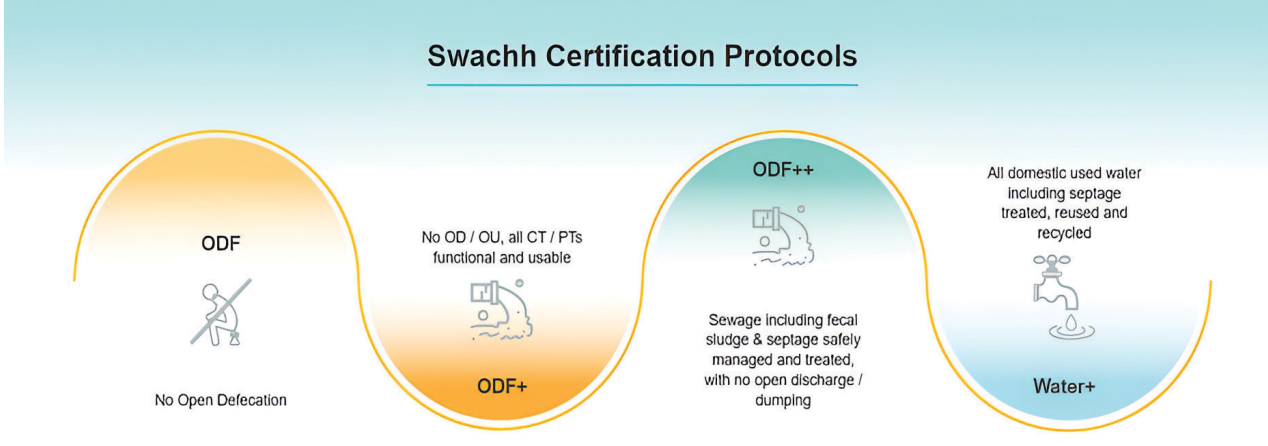


Image Source: SBM-U Portal

Coverage of Swachh Certification (SBM–Urban Dashboard, 2025)

The Swachh Bharat Mission (Urban) dashboard data for 2025 highlights the scale, intensity, and spatial spread of sanitation assessments carried out across Indian cities as part of certification processes such as ODF+, ODF++, Water+, and Garbage-Free City ratings.

At the institutional level, sanitation assessments covered 4,554 Urban Local Bodies (ULBs) nationwide. These assessments were conducted by 4,546 trained assessors, indicating near one-to-one deployment for field verification. In total, 74,623 locations were physically assessed, underscoring the Mission's emphasis on on-ground validation rather than desk-based reporting.

A significant focus of the assessments was on community and public sanitation infrastructure, with 27,930 community and public toilet (CT/PT) blocks evaluated. To strengthen transparency and evidence-based verification, assessors captured over 5 million geo-tagged photographs, which form a critical component of third-party assessment protocols under SBM-U. For this MoHUA partnered with Google to map all public toilets on Google maps, thereby improving ease of access of sanitation facilities to citizens. Till date, 2,300 cities have uploaded more than 57, 000 PTs mapped on Google maps, covering more than 50% of India's urban population (PIB, 2019). Additionally, 45,897 instances of citizen feedback were recorded, reflecting an effort to incorporate public perception and user experience into sanitation certification outcomes.

The dashboard further disaggregates coverage by infrastructure type and urban space, revealing the breadth of SBM-U monitoring. Assessments included 2,450 sewage treatment plants (STPs) and faecal sludge treatment plants (FSTPs) and 540 water bodies, highlighting the Mission's growing focus on wastewater management and environmental protection—key elements of ODF++ and Water+ protocols.

Sanitation access was assessed across gender dimensions, covering 1,14,002 male toilet seats and 1,09,722 female toilet seats, pointing to an attempt at gender-sensitive infrastructure monitoring. Household-level sanitation was also a major component, with 4,63,930 Individual Household Latrines (IHHLs) assessed.

Beyond residential areas, SBM-U assessments extended into diverse urban spaces that are critical for public health and service delivery. These included 2,070 transport hubs, 37,809 residential areas, 17,720 commercial areas, 92 industrial areas, and 11,416 public spaces. Importantly, 1,890 slum areas were also assessed, signalling an effort—at least in monitoring terms—to include informal settlements within the sanitation governance framework.

Overall, the dashboard data reflects SBM-Urban's transition from a construction-driven mission to a verification-intensive, outcome-oriented sanitation programme. The breadth of coverage illustrates the ambition of certification protocols like ODF++ to standardise sanitation outcomes across varied urban contexts, while also leaving data gaps in the assessments.

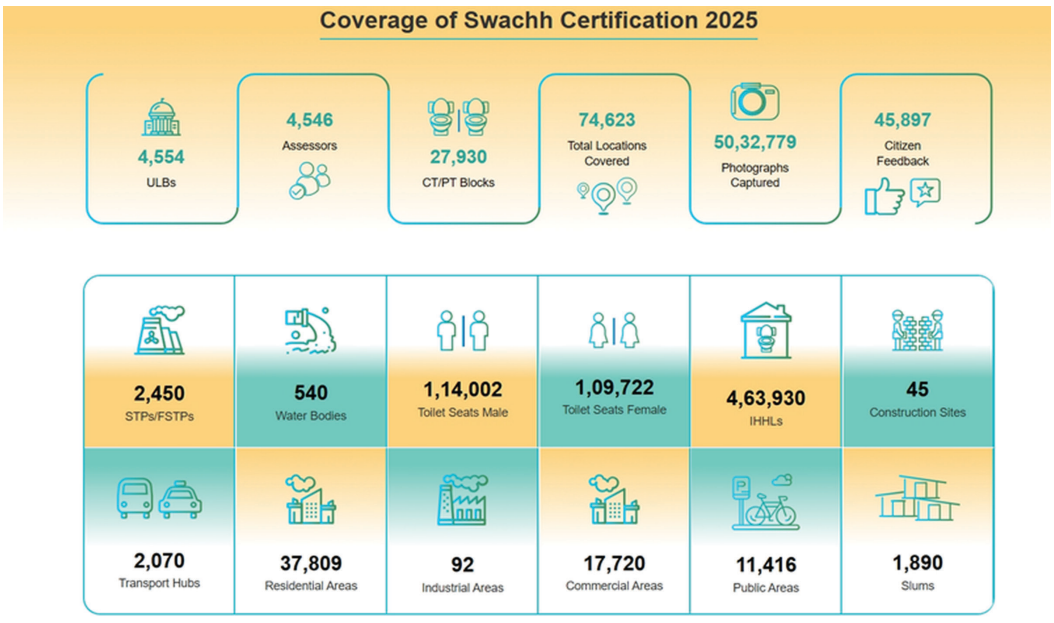


Image Source: SBM-U Portal

Conclusion: Assessment-Led Sanitation and Its Limits

The transition of SBM (Urban) from an infrastructure-driven program to an assessment-intensive governance framework is indicative of a larger change in India's conception and management of urban sanitation. Cleanliness has been institutionalized as a quantifiable and auditable outcome through standardized procedures, third-party verification, and data-rich dashboards; ODF++, Water+, and Garbage-Free certifications serve as important policy tools. This architecture has improved accountability, made it possible to compare cities, and highlighted the entire sanitation value chain, including wastewater and fecal sludge management. But there are also serious issues with the reliance on certification and recurring evaluations. While structural disparities—particularly in informal settlements and among sanitation workers—remain largely unaddressed, the performative logic of rankings and labels runs the risk of favoring compliance over long-term service excellence. Furthermore, ongoing operations, funding, and institutional ability at the local level are more important for maintaining ODF++ results than one-time verification. The difficulty as SBM-U 2.0 develops is to make sure that assessment regimes continue to be instruments for development rather than ends in and of themselves, integrating sanitation governance into regular urban service delivery as opposed to sporadic certification exercises.

Love, Toilets, and the Question India Didn't Want to Ask

Ayushman Meena

Toilet: Ek Prem Katha released in 2017 as a film that looked harmless on the surface, a small-town love story with colour, humour, and wedding songs, but very quickly it revealed what it really wanted to talk about, dignity inside the home and the quiet humiliations people learn to normalise.

Starring Akshay Kumar and Bhumi Pednekar, the film used romance as its entry point but refused to stay there, pushing the audience to confront an everyday reality most families preferred to laugh away or ignore. Akshay Kumar later told in an interview that the film made him uneasy in ways commercial cinema rarely does, because it forced him to play a man who believes he is loving and progressive, only to realise that love means very little when basic dignity is missing.

When a Marriage Collapses Over Dignity

Keshav loves Jaya, there is no doubt about that, but love in this film is tested not by betrayal or fate, but by something far more ordinary, the absence of a toilet. What the family calls tradition, Jaya experiences as daily humiliation, and the film does not dramatise this with excessive emotion, it simply lets her walk away, calmly and firmly.

One line from the film captures the moment perfectly, *"Aapko lagta hai main zidd kar rahi hoon? Mujhe lagta hai main sirf normal jeena chahti hoon."*(Do you think I'm being stubborn? I think I just want to live a normal life.)

It is not a speech; it is a boundary. In an interview, Akshay Kumar explained why Keshav had to be dismissive at first, saying that change never

begins with awareness, it begins with denial, and the character reflects that uncomfortable truth.

Comedy That Carries Discomfort

The film makes people laugh, but the laughter is uneasy, because every joke carries recognition.The line that stayed with audiences long after the screening,*"Aashiqon ne Taj Mahal bana diya, aur hum ek sandas bhi nahi bana paaye,"* (Lovers built the Taj Mahal, and we couldn't even build a toilet.) worked because it was not exaggeration, it was observation.

The media noted that the humour never distracts from the issue, instead it draws viewers in before forcing them to confront their own contradictions, a strategy that made the message harder to dismiss.

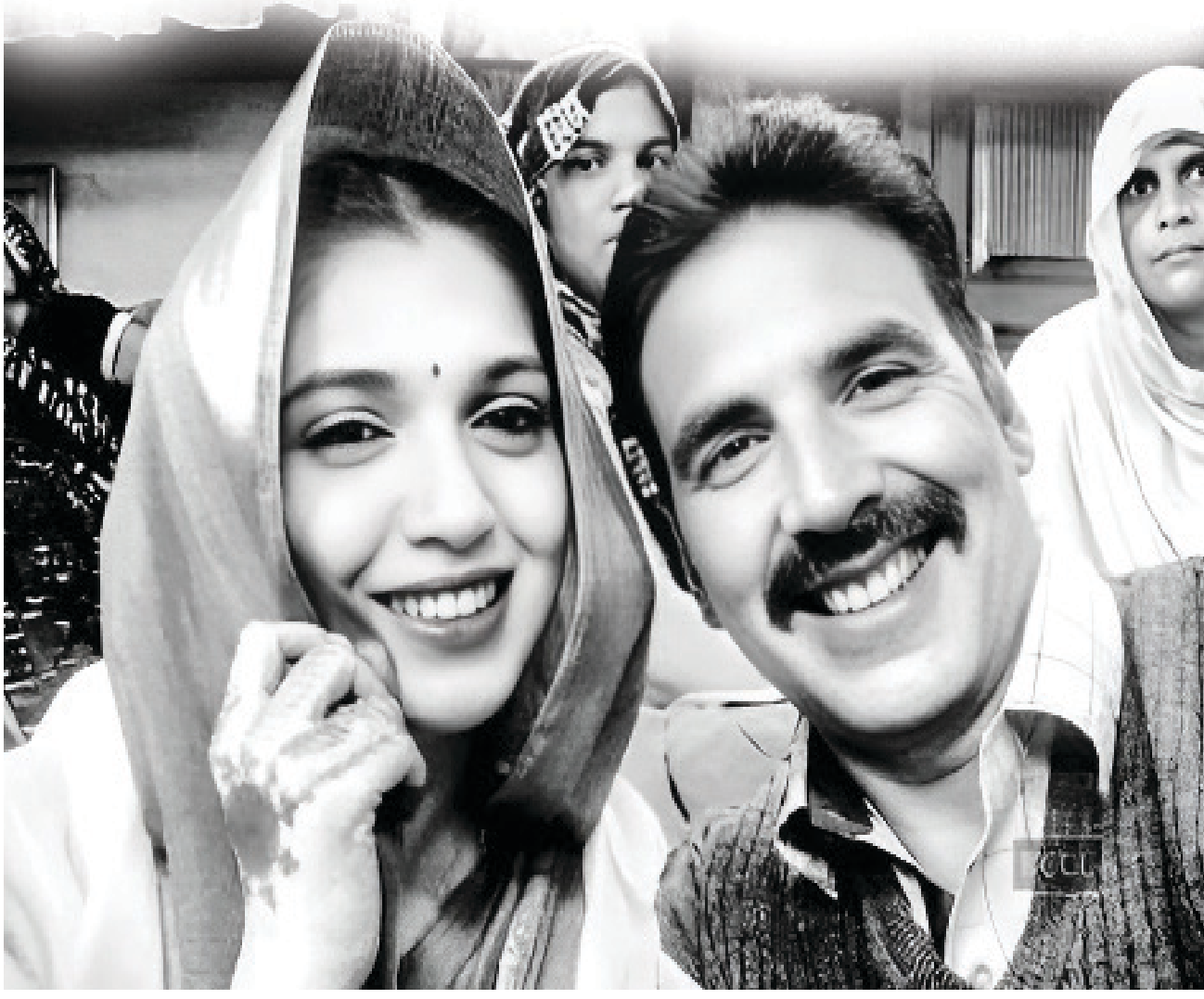
Bhumi Pednekar and the Power of Refusal

Bhumi Pednekar's character Jaya does not argue endlessly, she does not negotiate her self-respect, she simply refuses to live without dignity, and that refusal becomes the most radical act in the film.

Speaking to media, Bhumi said that Jaya's strength comes from clarity, not aggression, and that many women she met after the film told her they had lived the same story but never felt allowed to question it. Later, in an interview, she spoke about how the role reshaped her understanding of feminism, not as slogans or speeches, but as the right to say no without apology.

Choosing Risk Over Comfort

Akshay Kumar has often



spoken about the risks attached to the film, especially when friends warned him that a movie about toilets might damage his image.

He said that cinema cannot keep pretending that romance exists separately from reality, because issues like sanitation affect health, safety, and dignity every single day, whether people like talking about them or not. That honesty gave the film credibility beyond the screen.

Recognition That Went Beyond Applause

The film's commercial success was undeniable, with reporting that it crossed ₹300 crore worldwide, but its most significant validation came a year later.

In 2018, Toilet: Ek Prem Katha won the National Film Award for Best Film on Social Issues, with the Press Information Bureau highlighting its role in creating awareness and influencing social behaviour. It was a rare moment when mainstream cinema was acknowledged not just for entertainment, but for impact.

When Cinema Entered Public Policy Conversations

Prime Minister Narendra Modi publicly praised the film's trailer, calling it a meaningful contribution to the Swachh Bharat Mission.

Following the release, government departments and district administrations organised screenings, while NGOs referenced scenes from the film during sanitation awareness programmes, a development later reported by media.

The film did not just reflect a campaign, it amplified it, even as critics debated the closeness between cinema and policy.

Redefining Love Without Compromise

One of the film's most important moments comes when Keshav finally understands that adjustment cannot be demanded from only one side. *"Agar meri biwi khush nahi, toh yeh shaadi kis kaam ki"*, he says, not as a grand declaration, but as a realisation.

The relationship survives not because Jaya returns quietly, but because Keshav changes visibly, a shift that media described as rare in mainstream Hindi cinema, where women are often asked to endure rather than be heard.

What the Film Ultimately Leaves Behind

Toilet: Ek Prem Katha is not without flaws, it simplifies complex realities and chooses optimism where life is harsher, but it also achieves something few films manage. It turns a daily humiliation into a question of love, it tells women that dignity is not negotiable, and it tells men that responsibility begins at home.

As Akshay Kumar later said in an interview, if even a handful of families built a toilet after watching the film, then the story had already done its job, and judging by the conversations it sparked across homes, villages, and policy rooms, it clearly did much more than that.

Aamir Khan

Roots That Shaped the Man

Samiksha Shambharkar

Born in Mumbai on March 14, 1965, Aamir Khan came from a family steeped in Hindi cinema. While his father, Tahir Hussain, was a film producer, his uncle, Nasir Hussain, was one of the most significant filmmakers of his era. However, Aamir did not have an uninterrupted privileged upbringing. As a child, he saw first-hand the cyclical nature of the film industry, where success could be ephemeral and failure frequently abrupt. While some projects were successful, others failed, and there was always financial uncertainty. He gained a realistic understanding of professional instability and the value of perseverance over entitlement as a result of this early exposure.

This grounded perspective was reinforced during his formative years. Aamir was not a flamboyant or charismatic student at J. B. Petit School, St. Anne's High School, or Narsee Monjee College. He was quiet, perceptive, and very focused, according to his teachers and peers. He favoured contemplation over performance and listening over speaking. Later, this temperament, which is characterized by thoughtfulness rather than impulse, would influence both his public persona and acting style.

Sport was crucial in helping him develop his discipline. Aamir trained hard and dealt with the emotional pressures of competition as a state-level tennis player for Maharashtra. He learned to rely on patience and repetition, to accept setbacks without resentment, and to lose and start over through sport. His career decisions and his capacity to interact with complex social realities without spectacle were greatly influenced by these lessons in emotional control and fortitude.

From Newcomer to National Sensation

With Qayamat Se Qayamat Tak, Aamir made his debut in mainstream Indian cinema in 1988. He became a national sensation almost immediately after the movie. Aamir decided to take his time, in contrast to many actors who quickly profit from unexpected fame. He deliberately took a break from his unrelenting signing and spent time learning about cinema as a craft rather than a product.

Films like Dil, Jo Jeeta Wohi Sikandar, Rangeela, and Andaz Apna Apna gave him the opportunity to experiment with different genres while keeping creative control throughout the 1990s. His unwillingness to follow formulaic success became well-known. By the end of the decade, Aamir had established a reputation as an actor who prioritized story integrity over commercial trends and turned down more scripts than he accepted.

His later shift to socially conscious storytelling was made possible by this stage. It also solidified his reputation as a performer who made choices based on introspection rather than commercial pressure.

Beyond Stardom and Into Socially Conscious Cinema

A turning point came with Lagaan in 2001, a film set in colonial India that resonates very effectively with rural pride, resilience, and empowerment. Not only did Aamir star in Lagaan, but he also produced it, indicating a level of commitment to ensure stories he is passionate about get told on the big screen. Nominated for an Academy Award, it showed that stories set against local contexts can resonate worldwide without compromising their core elements.

Ever since *Lagaan*, Aamir's films have become increasingly responsive to ethics and societal issues. *Taare Zameen Par* triggered a nationwide conversation on dyslexia and inclusive education, encouraging understanding rather than stigma. This engagement with mental health continued in *Sitaare Zameen Par* in 2025, which brought attention to emotional well-being and psychological resilience, further normalising discussions around mental health.

In the year 2014, his movie PK, challenged the superstition in Indian society and unquestioned authority, and later in Dangal, where the narrative moved beyond girls' participation in sports to assert their right to education and equal opportunity. Taare Zameen Par challenged society regarding dyslexia because the story was about a child who had dyslexia but was very brilliant in the arts.

The reason this period was so special was not only the message but the way it was communicated. Aamir was associated with and combined all his ideas with educators and psychologists. His movies turned out to be classes and learning forums in themselves.

When Cinema Became Public Advocacy

This transition from cinematic engagement to direct advocacy thus surfaced through Satyamev Jayate. The television program presented medical negligence survivors, caste violence, domestic abuse, and systemic discrimination on a national platform. For most viewers, it was the first time that such issues were being collectively spoken about with seriousness and compassion.

Importantly, the programme did not isolate stories from action. It amplified the work of organisations like Breakthrough, Majlis, Childline India, and the Sneha Foundation to expand their reach and mobilise support. The show connected media, civil society, and policy conversations, underlining the way in which storytelling inspires collective responsibility.

This marked the transition in Aamir's career from representation to participation, wherein fame became a means of dialogue rather than distance.

Philanthropy Rooted in Education and Inclusion

Education has been a core point of intervention for Aamir Khan's philanthropy. Since Taare Zameen Par, he has supported a number of organisations that work with children with learning disabilities, such as the Akanksha Foundation and networks of special educators in Mumbai and Delhi. His advocacy strongly championed mainstreaming in inclusive classrooms rather than segregation, maintaining that difference needs accommodation, not isolation.

Besides finance, Aamir spoke about rigid systems of assessment, flawed training for teachers, and emotional costs due to exclusionary schooling. His intervention thus betrayed a sense that reforming education involves unlocking structural bottlenecks rather than individual inadequacies.

Water, Rural Livelihoods, and Collective Action

The Paani Foundation is the longest-running effort by Aamir in rural development, which he has established with the co-founder Kiran Rao. Watershed management and community mobilisation are used as the foundation to solve the drought and water scarcity of Maharashtra. Instead of depending on the outside hand, its strategy lies on the concept of local ownership and science planning. The Satyamev Jayate Water Cup was one of such projects that made villages do some water conservation efforts together. The monsoon was preceded by the planting of

check dams, contour trenches and rainwater harvesting facilities by communities. Throughout the years, these endeavours resulted in building up a water storage capacity of more than 550 billion Litres. This made the reliance on tanker water, as well as distress migration, less substantial. This transformation is seen in Velu village of the Satara district. After being characterized by chronic water deficits and seasonal migration, the village embarked on the coordinated water bodies and embankments. Within a year, the level of groundwater was better, agriculture was stable, and females no longer had to spend a lot of time and money on the long distances to fetch water.

Availability of clean water in the vicinity changed health behaviour, labour supply, and basic dignity. Income growth was boosted, and input expenses decreased by an average of 70 to 80 percent among farmer groups that adopted such practices. Water conservation was therefore seen as a channel of realizing economic stability and social resilience.

Supporting Women and Gender Justice

Gender justice has been a conscious effort by Aamir Khan. He used Satyamev Jayate to empow er the voices of women who had survived violence, and in conjunction with legal activists like Flavia Agnes, to clarify rights and remedies by the use of organisations like Majlis. His action was aimed at institutional responsibility and not at personal absconding.

To have made the women and their experiences a focus of his work and legal literacy central, his writings helped illuminate that gender justice does not exist in the symbolism of a few gestures at the operational level of systems.

A Legacy Beyond the Screen

In a nation with an uncertain climate, practicing rural affliction and constant disparity, Aamir Khan shows that celebrity impact could transcend figuratively. This has made visibility to become long-term social impact as he grounds his involvement in education, water security, gender justice, and collective participation.

His philanthropy is not based on the big things or his personal branding. Rather, it empowers existing institutions, reinforces the grassroots work, and rejuvenates community-based change. The villages in which people stay water secure, the village in which people live together, and the dialogue that occurs will all remain as a legacy to his work in the public, long after the films are forgotten.

Book Review:

Backstage Climate:

The Science and Politics behind Climate Change

Nidhi Chandrikapure

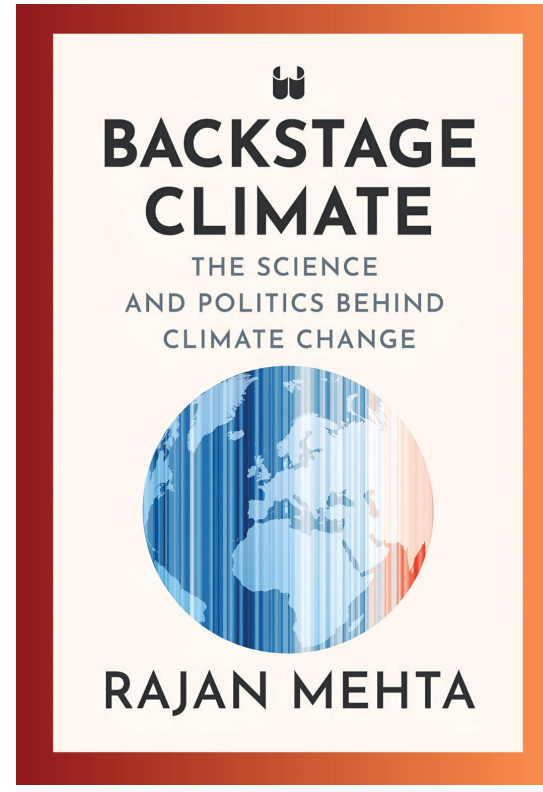
The literature on climate change often falls into two detrimental extremes. First, thick academic books filled with complex models and technical jargon. Second, populist narratives driven by headlines, urgency, and oversimplified viewpoints. Rajan Mehta's Backstage Climate: The Science and Politics behind Climate Change boldly takes up the valuable and uncommon middle ground. It provides readers with urgency without alarmism, depth without intimidation, and clarity without dilution. The end product is a well-considered, approachable, and extremely pertinent book that appeals to experts, students, legislators, and involved citizens in equal measure.

Rather than just responding to climate symptoms, Backstage Climate is fundamentally about comprehending the systems that influence climate outcomes. Mehta explains why progress frequently seems to be slower than the scope of the situation by taking readers "behind the scenes" of climate change, including its origins, feedback loops, incentives, and limits. The book continually returns to this crucial question: why does significant action still lag behind, given that the science is clear and solutions are available?

The book's structure is one of its best features. It enables readers to participate without feeling overburdened because it is written in little, self-contained chapters that are usually four to five pages long. Each chapter, which addresses a particular topic—energy systems, technology, industry, policy, or human action—while yet contributing to a cohesive overall story, acts almost like an essay. Younger readers or busy professionals who may not have the time to read the entire book in one sitting will find it especially approachable thanks to this modular approach.

Mehta's writing is purposefully straightforward, yet it's never overly so. Clear and concise explanations are provided for complex concepts such as grid stability, the tragedy of the commons, and intermittency in renewable energy. For example, it is very helpful to illustrate why wind and solar energy cannot yet cover all energy demands, even though they are becoming more affordable than fossil fuels.

The book demystifies a subject that is frequently reduced to catchphrases by elucidating intermittency, seasonal variations, and the crucial importance of energy storage.



The introduction of chemical, mechanical, and thermal storage systems is comprehensible without being shallow, providing readers with a genuine understanding of both advancements and constraints.

Although technology plays a major role in Backstage Climate, Mehta steers clear of both techno-optimism and techno-scepticism. Digital technologies, blockchain, AI, and machine learning are portrayed as tools with two sides. On the one hand, they enable cleaner systems, increased efficiency, anomaly detection, and smarter grids. However, they also consume a significant amount of energy and contribute substantially to pollution. A timely reminder that digital solutions must also be examined through a climate lens is provided by the book's discussion of "green coding" and resource-efficient computing.

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The topic of materials science and its potential to create a cleaner future is explored in another noteworthy section. Mehta demonstrates how material innovation can subtly but significantly lower emissions, from nanoparticles to composites to bio-based and recyclable materials. Particularly instructive is the handling of phase-change materials, which can store and release energy for use in transportation, insulation, and cooling applications. One of the main points of the book is reinforced by these examples: climate solutions are frequently scattered, incremental, and integrated into systems that we hardly ever notice.

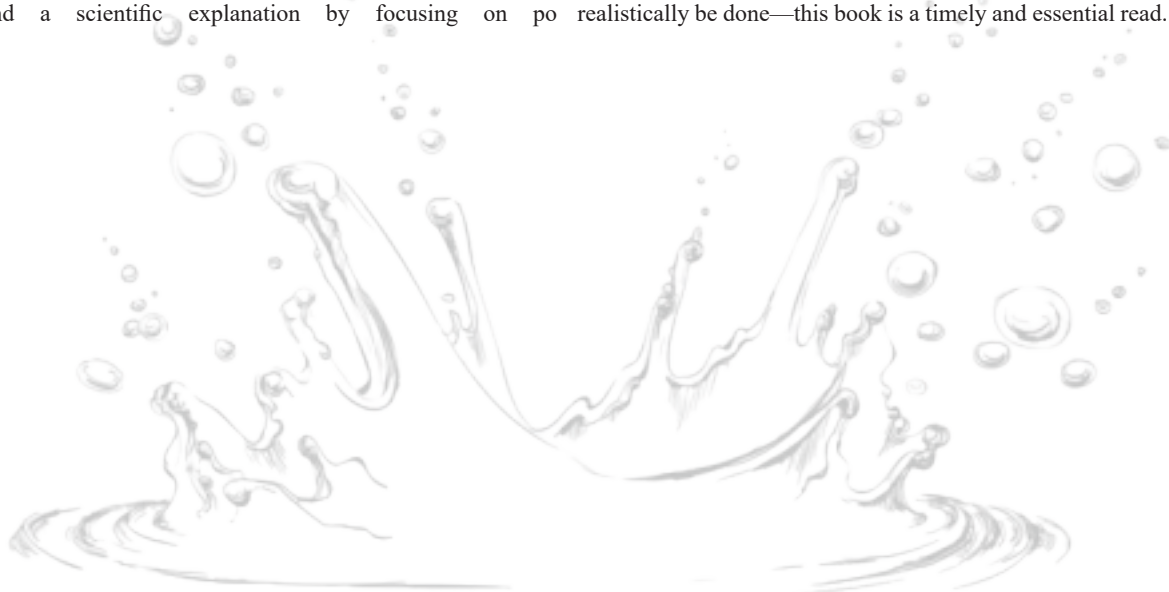
Particularly useful are the sections on industry and decarbonization. Mehta emphasises that "measure what you treasure" is the first step toward serious climate action. The book gives readers a methodical approach to thinking about accountability and responsibility by elucidating carbon footprints and the Scope 1, 2, and 3 emissions framework. Crucially, there is no accusatory tone. Rather, it is practical, acknowledging the operational difficulties that companies en counter while maintaining that action is imperative.

What makes Backstage better Climate goes be yond a scientific explanation by focusing on po litical economy, human behaviour, and incentives. Mehta candidly discusses mismatched incentives, the predominance of short-term thinking in politics and finance, and time gaps between action and observable results. Because of these insights, the book feels less like theory and more like a mirror, especially when it is grounded in actual situations, such as air quality issues or disasters caused by climate change. Climate change is portrayed as a system shaped by feedback loops that promote delay and penalise foresight, rather than as a single issue that needs to be resolved.

Particular attention should be paid to the book's visual components. Simple images and pictures serve to emphasise important concepts and break up the monotony of text. Instead of being ornamental, they help readers remember ideas long after they have finished reading. The goal of the book is to make climate understanding stick, and this design decision perfectly fits that goal.

The final sections have a contemplative and inspiring tone, particularly those that address personal and collective accountability. Climate action is presented as a mindset that should guide daily choices, encompassing innovation and consumption, as well as leadership and government, rather than as a one-time event. The message is very clear: decisions made now will be seen by future generations with either regret or thankfulness.

In summary, Backstage Climate is a mature, balanced, and deeply useful contribution to climate literature. It neither shouts nor oversimplifies. Instead, it patiently builds understanding, respects the reader's intelligence, and encourages thoughtful action. For anyone seeking to truly understand climate change—not just what is happening, but why and what can realistically be done—this book is a timely and essential read.



Turning Waste into Worth: How Banyan Nation Makes Industry- Grade Resin from Plastic Trash

Ayushman Meena

Banyan Nation began with a simple idea, clean plastic can be used again and again if systems are built to handle it properly. The founders believed recycling did not have to mean low quality or down-cycling. They set out to prove that post-consumer plastic could meet industrial standards and compete with virgin polymer.

Today, the company sells recycled polyethylene and polypropylene resins used by mainstream manufacturers. Large brands buy the material. Policymakers cite the model. Global forums recognise the work. The journey from waste to worth has been slow, technical, and deliberate.

Tighter the problem, bigger the claim

India produces millions of tonnes of plastic waste every year, much of it never enters formal recycling channels. The result is visible everywhere, clogged drains, polluted rivers, and plastic burned in the open. Banyan Nation does not attempt to solve every part of this problem. Instead, it focuses on one difficult gap, quality.

The company removes inks, coatings, labels, and contaminants from discarded plastic. It converts mixed post-consumer waste into near-virgin quality resin that can return to packaging and industrial products. This shift, from low-grade flakes to industry-grade pellets, changes the economics of recycling for both buyers and sellers. Media have noted that this focus on quality, rather than volume alone, is what separates Banyan from many recyclers.

The process

Plastic waste enters the system through a mix of organised collection and informal supply chains. Bottles and containers reach the facility, where sorting and washing begin. Advanced washing systems remove oils, inks, and residues that typically lower recycled plastic quality.

The material is then dried, melted, and extruded into pellets. These pellets undergo testing for colour consistency, odour, and mechanical strength. The final resin is tuned for injection moulding, blow moulding, or extrusion. This matters because manufacturers can run the material on existing machines without costly changes. Banyan's leadership has repeatedly stated in interviews that process control, not just machinery, is the real differentiator.

The hidden product: Trust

Recycled plastic struggles with one major issue, trust. Brands worry about inconsistency. Regulators worry about safety, especially

for packaging with human contact. Banyan Nation invests heavily in traceability and laboratory testing to address this.

Each batch is documented. Test results are shared with customers. This transparency allows procurement teams to justify switching from virgin resin. The World Economic Forum has cited Banyan for building reliable recycled material supply chains, especially in markets where informal collection dominates. That external validation helps convert sustainability interest into real purchase orders.

Scaling up: From pilots to plants

Scaling recycling is not just about demand, it is about land, capital, and approvals. Banyan Nation began with a pilot facility before expanding operations near Hyderabad. As demand increased, the company announced plans to invest nearly ₹200 crore to scale capacity.

The Telangana government welcomed the expansion. State minister Sridhar Babu publicly highlighted employment generation and the role of circular economy startups in industrial growth. Media framed the project as both an environmental and economic investment, showing how state support can accelerate circular infrastructure.

Why brands are buying recycled resin?

Three forces are driving demand. Regulation is one. India's Extended Producer Responsibility framework pushes companies to account for post-consumer plastic. Consumer pressure is another, as sustainability commitments move from marketing to procurement.

The third driver is economics. High-quality recycled resin can compete with virgin plastic when supply is consistent and performance is predictable. Banyan positions its product not as a compromise but as a substitute. Business media profiles note that this framing resonates with packaging and automotive suppliers who care more about specifications than slogans.

The social angle, integrating workers and waste pickers

Recycling in India depends heavily on informal labour. Banyan Nation builds structured links with waste aggregators, self-help groups, and collection partners. These relationships improve sorting at source and stabilise supply.

For waste collectors, formal offtake means predictable income and safer handling conditions. Company reports and interviews describe training initiatives that raise material quality while supporting livelihoods. This social integration reduces friction in a system often fragmented by small, unorganised suppliers.

Technology, not magic

There is no single breakthrough machine at Banyan Nation. The advantage lies in system design. Precision washing lines, optical sorting, controlled drying, and in-house quality labs work together to reduce variability.

Forbes India has reported that this technical discipline allows Banyan's recycled resin to meet demanding industrial applications. The result is material that performs consistently, batch after batch, a non-negotiable requirement for large manufacturers.

Recognition and credibility

Early recognition played a key role in Banyan's growth. The company received global attention through World Economic Forum circular economy platforms and awards. These endorsements did more than add prestige.

They reassured customers, attracted investors, and opened doors to policy conversations. Over time, this credibility helped Banyan move from pilot buyers to long-term supply agreements with major brands.

Challenges that remain

The road is not smooth. Feedstock quality varies by season and location. Contamination raises costs. Expansion requires heavy capital investment. Policy incentives differ across states.

Even when high-grade recycled resin is available, many converters need technical adjustments to adopt it fully. Banyan operates in a market where virgin plastic remains cheap and globally traded. Yet its emphasis on quality and traceability softens these structural challenges.

What success looks like?

For Banyan Nation, success is not just revenue growth. It includes steady demand from large manufacturers, formal income for waste collectors, and regulatory systems that reward recycled content.

Government statements around new plants and media coverage of expansion plans suggest that multiple stakeholders are beginning to align around this vision. Circular economy is no longer treated as a side project, it is becoming industrial policy.

Voices from the field

Co-founder Mani Vajipey has said in interviews that the company's goal is premium recycled plastic for injection and extrusion markets. Forbes India quoted him on the need for deep washing and tight process control to meet industrial benchmarks.

Telangana minister Sridhar Babu's public statements, reported by regional and national outlets, emphasised employment and sustainability as twin benefits of Banyan's expansion. These voices show how business and policy narratives are converging around circular manufacturing.

The bigger picture

Banyan Nation represents one piece of a larger transition. Governments, brands, and startups must work together to close material loops. High-quality recycling reduces dependence on virgin polymer and cuts lifecycle emissions.

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