INTERVIEW WITH TARIQ SIDDIQUI

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Simran Arora, Associate Editor, in conversation with him on his insights into the evolving water sector in the theme **From Scarcity to Sustainability: Building Resilient Water Systems.**

What are the most critical challenges facing India's water sector today, and how do they impact different stakeholders?

India's water sector is grappling with a range of complex and urgent challenges that demand coordinated and strategic action. The most fundamental issue is a stark imbalance between demand and availability, while India is home to 18% of the world's population; it has access to only 4% of global freshwater resources. This resource disparity sets off a chain of systemic problems.

From a strategic perspective, I see four primary challenges:

- **Severe Water Stress:** More than 600 million people face high to extreme water stress, especially in rapidly growing urban areas where infrastructure has not kept pace with demand.
- **Contamination of Water Sources:** Surface and groundwater sources are increasingly polluted by industrial effluents, untreated sewage, and poor waste management practices.
- **High Water Loss:** Nearly half of the water produced is lost during transmission due to outdated infrastructure and inefficient systems.
- **Fragmented Governance:** Water management is mired by fragmented policies and lack of coordination across states, leading to gaps in planning and implementation.

The impact is far-reaching and varies across different groups. In rural areas, access to clean water remains a major challenge, with many communities relying on unsafe sources. Women and children are especially affected, as they are often responsible for water collection and are most vulnerable to waterborne diseases. In urban areas, people face irregular supply and concerns over water quality. Industries are under pressure to comply with regulations while struggling to secure sustainable water sources.

From a communication and public engagement standpoint, there is also a serious awareness deficit. Many citizens and industries fail to see the direct link between their consumption patterns and the broader issue of water scarcity. This makes targeted behavioural change campaigns not just helpful, but essential.

How do you assess the progress of the Jal Jeevan Mission and what role can strategic communication play in its implementation?

The Jal Jeevan Mission represents one of India's most ambitious water infrastructure development programs, aiming to provide piped water to every household by 2028. From a strategic communication perspective, it's a massive undertaking that requires not just financial investment but sophisticated project management and stakeholder engagement. The mission has shown measurable progress, coverage has increased significantly from the 32.3 million in August 2019 to 157 million in August 2025. The key issues I observe are around last-mile connectivity, especially in geographically challenging areas, and ensuring long-term sustainability of the infrastructure created.

Strategic communication plays a vital role in the success of large water infrastructure projects by ensuring alignment, engagement, and long-term sustainability. It begins with effective stakeholder engagement, helping to map and involve communities, government bodies, and private partners. Clear, targeted messaging builds trust, addresses local concerns, and encourages active participation, which is essential for the acceptance and long-term use of water systems. Public awareness and behavior change campaigns are equally important, as many water initiatives depend not just on infrastructure but also on how people use and maintain it.

With climate change intensifying water scarcity, how should India's water management strategy evolve, and what innovative approaches should be prioritized?

Climate change is deeply altering India's water situation. We are seeing more extreme weather patterns; severe droughts followed by intense flooding, changing monsoon patterns, hurricanes and rising sea levels affecting coastal freshwater sources. This demands a paradigm shift from reactive crisis management to proactive resilience building. The strategy must evolve toward integrated water resource management with climate resilience at its core. This means moving beyond the traditional supply-side approach to demand management, water recycling, and ecosystem-based solutions.

Innovation priorities should focus on three areas: First, technology adoption; smart water management systems using IoT sensors for real-time monitoring, AI-driven demand forecasting, and blockchain for transparent water trading mechanisms. Second, nature-based solutions like wetland restoration, urban green infrastructure, water

recycling and reuse, and traditional water harvesting methods scaled with modern techniques. Third, is the need of innovative financing mechanism. Green bonds, impact investing, and results-based financing can mobilize private capital for water infrastructure. Community engagement innovation is equally important. The key is creating resilient systems that can adapt to changing conditions rather than rigid infrastructure that may become obsolete.

How can public-private partnerships be leveraged more effectively in India's water sector, and what are the key success factors?

Public-private partnerships (PPPs) can play a transformative role in addressing the challenges of India's water sector, especially by bridging gaps in financing, technical expertise, and operational efficiency. To leverage PPPs more effectively, the focus must shift from one-size-fits-all models to tailored, well-structured collaborations that align the strengths of both, the client and developer with the larger goal of water security and service delivery.

One of the key parameter to improve PPP effectiveness is by designing clear, transparent, and balanced contractual frameworks. There should be clear roles outline, responsibilities, risk-sharing mechanisms, and performance-based incentives to ensure accountability. Strong regulatory structure and independent monitoring are also essential to maintain service quality, avoid disputes, and build public trust.

Another success factor is capacity building within public institutions to manage and negotiate PPPs effectively. Many local bodies lack the expertise to structure complex deals or monitor performance. Targeted training and institutional strengthening are crucial to address this gap. In addition, leveraging blended finance, using public funds or guarantees to de-risk private investment can attract more

> In complex sectors like water and infrastructure, sustainable change begins when we stop working in silos and start building partnerships that serve both people and the planet.

participation from the private sector in less commercially viable but socially critical water projects. The transparency and communication are critical. Public perception often becomes a barrier if PPPs are seen as profit-driven rather than service-oriented. Clear messaging about goals, benefits, and safeguards can help align stakeholder expectations. When PPPs are rooted in good governance, community participation, and long-term value creation, they can significantly enhance the resilience, reach, and efficiency of India's water sector.

What role does communication and public awareness play in addressing water challenges, and how can messaging be tailored for different stakeholder groups?

Communication is absolutely fundamental to water sector success; it's not just about building infrastructure but changing behaviors, building support for policies, and creating a culture of water stewardship. My experience across sectors has shown that technical

> Strategy is not just about setting goals; it's about aligning people, systems, and purpose to turn vision into lasting impact, especially in critical sectors like water where every decision shapes lives and futures.

solutions fail without effective communication strategies. The challenge is that water issues affect everyone but in different ways. Rural communities need practical information about water quality and conservation techniques. Urban consumers require understanding of pricing, rationing, and their role in demand management. Industries need clear regulatory guidance and business case development for sustainable practices. Policymakers need data-driven insights and political messaging that builds consensus.

Our approach involves developing stakeholder-specific communication strategies. For rural communities, we use local languages, traditional media, and community leaders to build trust and understanding. For urban audiences, digital platforms, social media campaigns, and influencer partnerships work effectively. For industries, we focus on best practices, case studies, and clear path of return-on-investment.

Crisis communication is equally important. During unforeseen events, water shortages or contamination outbreak; clear and consistent messaging can prevent panic and guide appropriate responses. We develop crisis communication protocols that ensure accurate information flow and maintain public trust. Most importantly, we measure communication effectiveness through behavior change metrics, not just awareness levels. The ultimate goal is creating a water-conscious society where conservation becomes a social norm rather than a government mandate.

What is your outlook for India's water sector growth over the next decade, and how will technology reshape the landscape?

India's water sector is poised for transformational growth over the next decade, driven by a perfect storm of increasing demand, climate pressures, and technological innovation. With water demand projected to increase by 22% by 2025 and industrial production contributing 17% to GDP, we are looking at a sector that will fundamentally reshape how India manages its most critical resource. The growth trajectory I envision has three distinct phases: infrastructure completion through 2028 as we finish the Jal Jeevan Mission, followed by massive technology integration, and finally ecosystem transformation where water becomes a data-driven, predictive asset.

Technology will be the primary catalyst, with smart water management systems leveraging AI, IoT, and data analytics to optimize usage across all sectors. We are already seeing IoT solutions addressing non-revenue water losses, which represent significant revenue leakage for utilities, while AI models are being applied to wastewater recycling and demand forecasting.

The Indian water treatment market alone is expected to grow from USD 12.1 billion in 2024 to USD 40.9 billion by 2032, growing at a CAGR of 16.7%, indicating broader sector dynamism. From an advisory perspective, this creates unprecedented opportunities for public-private partnerships, technology deployment strategies, and stakeholder engagement frameworks. The convergence of urgent need, available technology, and policy support means the next decade will determine when India transforms its water crisis into a sustainable, technology-driven success story.