Raipur's Rainwater Revolution: How Community Participation is Strengthening Urban Water Security in Chhattisgarh

32,000 Rainwater Harvesting Structures Created Under Jal Sanchay Jan Bhagidari Make Raipur a Model for Urban Groundwater Recharge

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Under the nationwide **Jal Sanchay Jan Bhagidari (JSJB)** initiative, Raipur has emerged as a notable model of urban groundwater recharge and rainwater harvesting through large-scale public participation and institutional collaboration.

Once marked by recurring waterlogging during monsoon and steadily declining groundwater levels, the city is now demonstrating how scientific planning, community engagement and innovative low-cost solutions can transform urban water conservation.

Despite receiving nearly 1200–1400 mm of annual rainfall annually, Raipur had been facing a growing water management challenge. Rapid urbanisation, increasing concretisation and excessive groundwater extraction had led to declining water tables in several areas, even as substantial rainwater runoff was lost through drains during monsoon.

Recognising this challenge, the Raipur Municipal Corporation, in collaboration with technical experts, builders, institutions and citizens, launched an extensive rainwater harvesting and groundwater recharge campaign under JSJB.

The initiative has delivered significant results. During 2025 alone, nearly 32,000 rainwaters harvesting and groundwater recharge structures were created across the city. These include recharge wells, percolation pits, injection wells, recharge shafts, rooftop harvesting systems and stormwater recharge structures.



A key strength of Raipur's approach has been strong public-private collaboration. Builders and developers associated with CREDAI integrated rainwater harvesting systems across residential colonies, commercial complexes, institutional campuses and public spaces, while citizens increasingly adopted rainwater

conservation as a shared civic responsibility.

The city has also adopted innovative and cost-effective technical interventions suited to local hydrogeological conditions. Permeable Eco Blocks are being promoted across footpaths, parking areas and open spaces to facilitate natural groundwater recharge while reducing urban waterlogging.

In another innovative intervention, tractor-mounted auger drilling technology combined with multilayer filtration systems and slotted recharge pipes has enabled rapid and cost-effective construction of recharge structures across multiple locations.

These interventions have created substantial recharge potential. Recharge wells can replenish up to three lakh litres annually, while injection well systems in groundwater-stressed zones can recharge up to fifteen lakh litres every year.



Importantly, Raipur's efforts extend beyond infrastructure creation to long-term policy reform. Under town and country planning provisions, developers are being encouraged to reserve at least one percent of planned areas for water harvesting and green spaces. Mechanisms for regular maintenance and desilting of recharge systems are also being institutionalised.

The city is simultaneously advancing broader water resilience initiatives. An integrated Eco Bloc project across the Kharun River, being implemented with an outlay of ₹30 crore under a disaster management initiative, aims to conserve rainwater at scale and support development of a "Sponge City" model. Interconnection of ponds and lakes is also being undertaken to improve urban water storage and distribution.

Parallel efforts to promote treated wastewater reuse for industrial and infrastructure purposes are further strengthening circular water management in the city.

Raipur's experience reflects a significant shift in urban water governance, where groundwater conservation is no longer viewed solely as an engineering challenge but as a participatory civic mission involving government institutions, communities and local stakeholders.

As Indian cities confront growing groundwater stress, urban flooding and climate-related water challenges, Raipur offers a scalable and replicable model for sustainable urban water management.

The city's success demonstrates that when policy support, technical innovation and community participation come together, rainwater can be transformed from seasonal runoff into a lasting source of urban resilience and water security.

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