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In too deep

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Highlights

Groundwater level in parts of Bengaluru Urban and Rural drops four metres despite more than average rainfall, report says
'Construction sites should use recycled water'

By Garima Prasher

Despite the incessant rainfall last rainy season, groundwater level in Bengaluru Urban and Rural districts has gone down, a report by the Groundwater Directorate of Bangalore has revealed.

The report compared groundwater levels in December 2020 and December 2021.

While the average groundwater level in Yelahanka taluk dipped by almost four meters when compared to December 2020, Anekal recorded a drop of two meters.

Experts blamed it on rampant urbanisation and lack of proper planning: 'while the city's undulating landscape is perfect for the creation of filtration wells, it is not being taken seriously'.

"It surely is a warning for all of us as a big chunk of the city's population depends on groundwater. However, there is little that we are doing towards improving the situation. While we had only 4% of the city under concrete in 1973, today, it is over 80%. While rainfall is there, concrete surfaces block water harvest. Most of the rainfall is not conserved as the water does not percolate. Percolation happens when there is a pervious area in the landscape, either in the form of vegetation or waterbodies. If this trend in concretisation continues, we will soon run out of water," said Dr TV Ramachandra, Centre for Ecological Sciences, IISc.

Due to copious rainfall last year, experts said, contrary to the report, most places should have recorded an increase in the groundwater level. However, heavy construction activity in various parts of the city cannot be overlooked.

"Construction activities are one of the biggest worries. Many big construction projects underway use freshwater. Construction sites should use recycled water," said V Ramprasad, co-founder and convenor of Friends of Lakes.

Taluks under Bengaluru Rural fared no better. In Hoskote and Nelamangala, the report showed the average groundwater level fell by four meters when compared to December 2020.

"A lot of landscape degradation has happened in the rural areas.

Many places have come up with monoculture plantations of species such as eucalyptus and rubber, which are water guzzlers. As agricultural irrigation solely relies on groundwater, it further lowers the water table," said Dr Ramachandra.

When you go deeper, geological strata have trace elements. Water quality starts degrading…

— Dr TV Ramachandra, IISc

Some improvements
It is not all bleak, however. As per the report, Bengaluru East and parts of Bengaluru North have registered an average rise in groundwater level of four meters above ground level. Bangalore South has maintained the status quo.

“An improvement in the groundwater level in the East zone can be due to the rejuvenation of Varthur and Bellandur lakes. This stresses the importance of maintaining our waterbodies and desilting them,” said Dr Ramachandra.

Availability of Cauvery water may be a factor: “Predicting groundwater recharge can be a tricky business,” said Ramprasad.

Going deeper into water table has consequences
On an average, water table in Yelahanka and Anekal taluks is now available at 20-30 m below ground level; in Hoskote and Nelamangala it is at 40-52 m below ground level and in Bengaluru East, Bengaluru South and parts of Bengaluru North, it can be reached at 10-20 m below ground level.

Going deeper into the water table has health implications. As per a report by the Central Groundwater Board, in majority of the groundwater samples collected from Karnataka, concentration of fluoride, arsenic and iron was found to be above permissible limits.

“This happens when you go deeper into the water table and touch the geological strata that have trace elements. Water quality starts degrading. The only way to improve groundwater water quality is by improving land cover and land use, augmenting recharge capacity,” added Dr Ramachandra.

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Way forward?
Experts are of the view that desilting of lakes, catchment management and rainwater harvesting at household-level can restore groundwater levels.

“Groundwater Directorate should draw up a management plan to ensure demand is managed vis-a-vis supply. Every taluk should have a groundwater

management plan," said S Vishwanath, Urban planner and water conservation expert.

Catchment area and lake management have direct impact on groundwater; there are visible outcomes.

"Our study has shown when the catchment has native species of vegetation, water is available throughout the year. We have 193 lakes in the city. If we desilt these and manage the catchment areas, groundwater level will increase. Sarakki Lake in South Bengaluru is a case in point. The lake was restored two years ago; residents will testify the groundwater level in the area shot up by 150 feet within a year," added Dr Ramachandra.