

Depleting water table

POINT
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Borewells, sink no more

When the water table has depleted dangerously to 1,500 ft and deeper, does the proposal to sink more borewells make any sense? The priority should be on recharging aquifers, not exploiting them.

At the mercy
of the tankers

It is still February but the blistering sun has left Bengalureans deeply worried about the impending water crisis in the next three to four months.

While most areas in core Bengaluru get Cauvery water, the situation is grim in the newly added 110 villages. These villages do not come under the purview of Bangalore Water Supply and Sewerage Board (BWSSB), which has expertise in handling the water distribution system and sewerage network.

Eventually, the citizens are left at the mercy of BBMP and the corporators, who call the shots in their respective wards. Cauvery water has not reached most parts of these

110 villages. Borewells could be their saviour, but overdoing it has already depleted the water table in these villages.

This year, BBMP has reserved Rs 40 crore for water supply, digging new borewells and repairing the old ones.

BBMP commissioner N Manjunatha Prasad says, "Understanding the gravity of the situation, we have reserved Rs 40 crore. We will make sure that people do not suffer for want of water."

The problem, however, is the judicious expenditure of funds. As the water crisis looms large over these villages, it is time for water tankers to make brisk business. Even BBMP officials are not left behind in this game of churning money out of crisis. In most of these villages, water suppliers draw water from the BBMP borewells and sell it elsewhere for rates ranging from Rs 500 to Rs 700 per tanker.

Ravindra (name changed), a resident of Alahalli in Anjanapura, says the BBMP tankers do fill up water. "We, however, do not know where these tankers are actually going. Instead of spending so much on tankers, the Palike could have laid pipelines to supply water," he says.

The situation across the five zones of BBMP, Rajarajeshwari Nagar, Bommanahalli, Mahadevapura, Yelahanka and Dasarahalli is more or less the same. Mayor G Padmavathi says the BBMP would act tough if there are complaints of private tankers indulging in malpractices. "We will take immediate action if there is information that the tankers are drawing water from BBMP borewells and selling it. In the 110 villages, we will make sure that water supply is adequate," says the Mayor.

The BWSSB has plans only for the core area of BBMP involving three zones of East, West and South. "We are not looking at the newly added areas. Apart from core Bengaluru, we are supplying water in six CMCs. We have 7,900 borewells in these areas of which 690 borewells have gone dry. Rest are in good condition. Wherever there is water crisis and Cauvery water has not reached, we will supply water through tankers or through the network of borewells," informs BWSSB engineer-in-chief Kemparamaiah.

G Manjusainath

Percolation pits for RWH

Jayanagar MLA B N Vijay Kumar stresses on percolation pits that can harvest rainwater.

He says, "Bengaluru is an abnormally growing city. Bigger areas such as apartments, educational institutions, parks,

stadiums, playgrounds and roads should have percolation pits. These pits allow the rainwater to replenish the groundwater.

If it is procured meticulously, we don't have to depend on other resources for water."

Residents emphasise local solutions to address water woes

Summer is just around the corner and water woes have already gripped Bengalureans. In the past few years, the demand for water has been on rise in most of the areas due to depletion of water table.

An increase in high-rise apartments, townships and villas has led to indiscriminate digging of borewells, depleting groundwater levels. On the other hand, water scarcity has become widespread. To understand the concerns better, *DH* speaks to residents and water experts.

Ayyappa M Masagi, founder, Water Literacy Foundation, says, 15-20 years back, rainfall was periodic, giving the soil

surface sufficient time to percolate the rainwater into the sub soil. "Gradually, the city drifted towards rapid industrialisation and boom in real estate industry, led to the encroachment of lakes by the builders," he explains.

Bengaluru founder Kempegowda had constructed 382 lakes. Only a few survive. The government, he says, is spending money only on drilling new borewells but is not concerned about sustaining the water table from where the borewells draw water.

If the trend of 'Only use and

no recharge' continues then our future generation would be left with only sea or ocean water, he warns.

To address the water crisis, Masagi suggests roof rainwater harvesting (RWH). "This is a simple way of channelising, filtering and collecting rainwater as an alternative to river, openwells and borewell water. By RWH, we can reduce pressurised load on existing water supply," he says.

Another solution is to recharge the borewell or open well. Lake construction and replenishment are ideal for those who have huge rainwater catchment area. "After years of research on lakes, I recom-

end government that there should be a one-acre lake for every 100 acres to bring back the golden days when openwells, rivers and streams were always full."

Water usage during summer is naturally high, says Pushpa Thomas, a resident of Indiranagar. In summer, there is more heat, more dust and sweat. So bathing sometimes even twice a day becomes a basic requirement, she adds.

Water supply twice a week for shorter duration has resulted in a scarcity. "Water tankers are an answer, but the quality

of water is always suspect. Here, the rates for tankers vary. Some charge Rs 600 for 6,000 litres others up to Rs 1,200. The rates peak when demand is more. Some people have monopoly. They decide the rates. But unless there is another option private tankers are here to stay," Pushpa feels.

She laments that people sink borewells up to 1,500 ft deep, unscientifically. "Groundwater exploitation has made the water level go down. Maybe

recharging the groundwater would bring it up. The quantity of water stored from rains is finite, whereas the usage is increasing day-by-day," she notes.

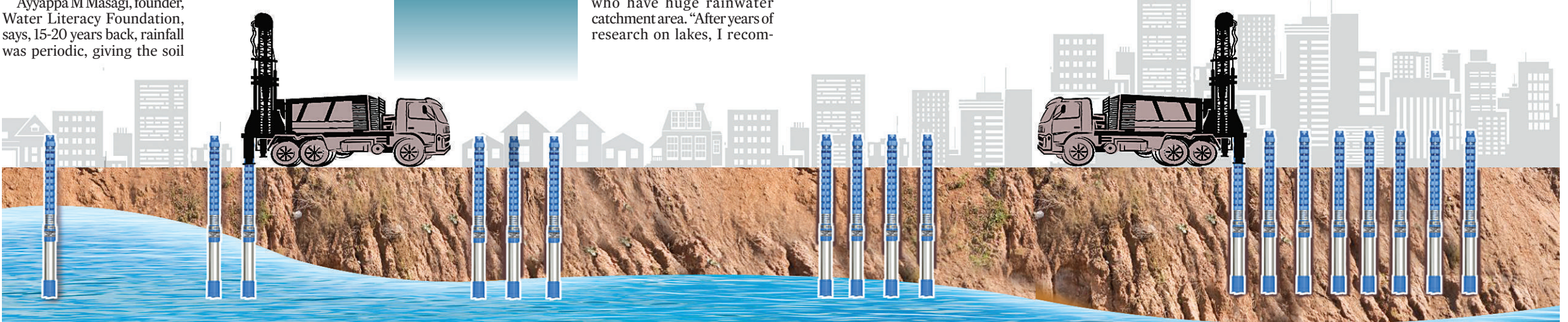
Priya Desai, Consultant, India Water Portal, feels the government should start looking at local solutions such as RWH, community efforts to rejuvenate lakes across the city and to recharge groundwater to address the water issue.

These localised solutions, she says, can work on a long-term basis. "We need to break away from the centralised de-

pendence on water because the government is not able to manage it judiciously."

The government brings Cauvery river water from 100 km away, but the annual rainfall that we get is actually enough. "It is sad to know that we are not able to harvest the rain that can last for the whole year. I feel that like-minded people should come together and encourage the community efforts than depending on the government to act upon the issue," says Priya.

Pavithra T G



Cornered by the impending water crisis in Bengaluru this summer, shaken by the dried up reservoirs, the government has scrambled up a solution: Go underground! Yes, they are talking about borewells again. So what if the water table has depleted beyond redemption.

Unprecedented in scale, the water shortage this year is bound to affect everyone in myriad ways. But scientists, water experts and long-time Bengalureans are unanimous in their views: Borewells just cannot be a solution.

Last month, Chief Minister Siddaramaiah had articulated the solution clearly. New borewells had to be dug by



March. For years, the Bruhat Bengaluru Mahanagara Palike (BBMP) and its corporators had done so in wards across Bengaluru.

Despite warnings from sev-

eral quarters, excessive drilling of borewells has gone unchecked. The water table has dramatically depleted in many areas on the city's outskirts. Private tankers, by

drilling bores on massive scales, have been the game-changers.

Depleting water table
The indications are clear.

There are no signs of water even at depths of 1,500 ft and deeper. In areas where the Bangalore Water Supply and Sewerage Board (BWSSB) has no pipeline network, individual borewells and water tankers are the only options. Many of these have dried up.

Anticipating the peaking water demand, tanker operators have hiked their rates. With sources of water disappearing fast, more borewells are being dug up flouting all rules. Residents, both of individual houses and apartments, in the 110 villages dread that the tanker rates could get unaffordable as summer advances.

BWSSB's contingency plan is to sink more borewells. A survey by the Board found that 938 out of 7,920 borewells in the BBMP limits have become non-functional. The attempt now is to revive these besides drilling about 400 more wells. But that would depend on how the water crisis unfolds over the next three months.

The Karnataka Regulation for Protection of Sources of Drinking Water Act poses a challenge to indiscriminate digging of borewells. But the government machinery could circumvent this, citing water shortage.

Reversing depletion

Can the inevitable depletion in the ground water table level be reversed? This might sound idiotic when the contributing factors for the depletion continue unabated across the city: More trees are being felled for infrastructure projects like never before and efforts to revive lakes are yet to gather pace.

But the Indian Institute of Science (IISc) had scientifically proven that it is possible. A mini forest planted in a two-acre plot near the IISc Centre for Ecological Sciences (CES) had raised the water table from 200 ft to just over 10 ft. The turnaround was remarkable.

The brain behind the project, senior scientist Dr T V Ramachandra explains that green cover is critical for water to percolate and recharge the groundwater. Due to road-widening and infrastructure projects, Bengaluru has lost lakhs of trees.

Loss of green cover also has a direct effect on heating. Measurements inside the mini forest in IISc had shown that the temperature within was two degrees cooler than outside. The implication becomes apparent. The state's fixation with borewells is an idea whose time has long gone!

Senseless, foolish

Dr Ramachandra dubs it 'senseless' and 'foolish' to believe that borewells will solve the city's water problem. "We have absolutely no right on the aquifer when the lakes are allowed to be encroached," says the scientist.

Four decades ago, the city, through its intricate network of lakes had the capacity to store 35 tmcft of water. "Today, 79% of those lakes have disappeared.



PRIYA DESAI
Consultant,
India Water Portal

It is sad to know that we are not able to harvest the rain that can last for the whole year. Like-minded people should come together and encourage community efforts.

The current storage capacity of the surviving lakes is only about 5 tmcft. Due to silt, that too has reduced to 1.9 tmcft," he informs, citing a recent IISc study.

Bengaluru's current annual water demand is 18 tmcft. Seventy per cent of this could have been met through rainwater alone if the lakes had remained.

Besides rooftop Rainwater Harvesting (RWH), he says, the emphasis should be on restoring the lakes. To address the city's water crisis in the long term, the priority should be on recharging the underground aquifers and not exploiting them. In areas around active lakes, water becomes available even at depths of 100 ft.

The city generates about 16.04 tmcft of sewage every year. Treating this and options to recycle and reuse could minimise Bengaluru's dependence on water from outside the region.

However, this model of decentralised harvesting of water and reuse of treated sewage is not an attractive proposition for the current breed of decision makers, say water experts.

Rasheed Kappan

AYYAPPA M MASAGI
Founder, Water Literacy
Foundation

The government is spending money only on drilling new borewells but is not concerned about sustaining the water table from where the borewells draw water.



SUNDAR M SETHILNATHAN
Policy Research, Arghyam

Citizens need to move beyond blaming the government. At a neighbourhood level, when people collaborate, innovations can and do happen in securing local water resources.



PUSHPA THOMAS
Resident, Indiranagar

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