

Will Bengaluru run out of water and is it too late to save the city?

Water from single source, no proper treatment plan, is Bengaluru set to go the Cape Town way?

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Is Bengaluru going to run out of water soon? The acute water crisis at Cape Town in South Africa has alarm bells ringing in Bengaluru and the city even featured in a BBC [list](#) on 'The 11 cities most likely to run out of drinking water'.

With the city's planning in a shambles, experts say that Bengaluru is definitely on its way to becoming the next Cape Town.

Although water shortage is definitely a problem, it may become a major crisis if the city's planners do not identify the core issues eating at Bengaluru's water management plan.

Successive governments have not bothered to look into sustainable avenues to manage the city's water requirements.

What exactly are the problems faced by Bengaluru and is there a way to save the lost Garden City?

The single source dependency

It all began when the Hesarghatta reservoir was constructed in 1894 during the British Raj with the intention of storing water from River Arkavathy for a period of three years.

Back then; this seemed like an ideal plan as the Arkavathy river basin was interconnected with 184 manmade tanks.

When the Hesarghatta tank [started drying up](#) in the year 1925, the Chamaraja Sagar Dam or the Thippagondanahalli Dam was constructed downstream of the Hesarghatta Lake. This dam was the source of water supply of most of Bengaluru. In 1994, the Hesarghatta Lake began deteriorating and this was the last year when clean water entered the tank. Soon, due to the sewage entering the storm water drains, the lake's water could not be used for domestic use.

By 1969, the city could no longer draw water from the TG Halli reservoir either and this was the year Bengaluru began drawing water from river Cauvery.

“This seemed like a really good plan back then but the problem with the water management plans made in years that followed is that the city's administrators got lazy and did not bother to look for alternate avenues. They only cared about short term solutions. They did not think about the long-term effects,” says Dr Veena Srinivasan, hydraulics expert with Ashoka Trust for Research in Ecology and Environment (ATREE).

When urban planning did not keep up with fast-paced growth

In 1991, the [population](#) of Bengaluru was over 41 lakh in a city with a total area of 226 sqkm. The city's population exploded, especially after India opened up its economy in this very year. Fast forward to today; Bengaluru now has a population of over 12 million in a total area of 771 sqkm.

“Bengaluru was swiftly going from a small colonial cantonment town to a cosmopolitan city and the city's planners did nothing about it. They did not stop to look back at how the city had survived without any big infra projects. The planners only wanted to keep up with technology being deployed everywhere else in the world rather than look at what is best for Bengaluru. No

one thought about increase in population and the effects it would have on a shallow water management plan,” a senior official in the Urban Development Department told TNM.

According to TV Ramachandra of Indian Institute of Science, when Bengaluru’s population exploded, so did the number of houses and commercial establishments requiring water.

“In addition, 78% of Bengaluru became concretised in just four decades. This has also led to unequal distribution of groundwater and in some suburban areas; the water level has reached 1,700 ft below the ground. This is not promising and Bengaluru may well be on its way to another Cape Town,” he added.

Why a single source of water is not enough

Despite the herculean effort to bring water to Bengaluru all the way from the Krishna Raja Sagar Dam in Mandya district, the shocking reality is that only half of Bengaluru gets Cauvery water - this according to data provided by the Bengaluru Water Supply and Sewerage Board (BWSSB).

“It was only in 2017 that the Cauvery water pipeline work for the suburban areas of Bengaluru began. The heart of Bengaluru gets Cauvery water. This is about 55% of the population while the rest who live in the suburbs mainly run on borewell water,” a BWSSB official added.

Dr Veena Srinivasan points to lack of wastewater management for the looming water crisis.

“We do not manage waste water properly, which is a resource. This is because it takes time, effort and money. One way is to treat waste water and discharge it into lakes. This treated water can go through secondary treatment and be used for domestic purposes and Cauvery water for drinking. If BWSSB thought about Integrated Urban Water Management - then they have to think about wastewater, storm water and groundwater. Every component where water can be obtained has to be thought of,” Dr Veena adds.

According to the senior official with the BWSSB, obtaining water from a single source is easier than maintaining hundreds of lakes.

“If the lake system is revived, it will require more money, more effort to ensure that sewage is not being pumped into the lakes, which is why it was not considered feasible while formulating water management plans in the past. But Bengaluru will not run out of water anytime soon,” the BWSSB official added.

BWSSB data states that 65% of its expenditure is spent on payments for electricity used to draw water from KRS Dam.

“There is a problem of leakages in the water pipeline, which is in turn resulting in ground water recharge,” the official said.

Although experts do not disagree with BWSSB's argument, they say that the water supply agency's apathy towards maintaining the one project has led to uneven distribution of groundwater.

A [report](#) by the Comptroller and Auditor General states that half of the Cauvery supplied to Bengaluru between 2009 and 2013 was wasted either due to pilferage or loss due to leakage.

“The groundwater levels are up to 10-15 ft in areas which get Cauvery water. This is good. But if we look at the other half of Bengaluru which does not get Cauvery water, the groundwater levels are extremely low and, in many places the borewells have dried up,” Dr Veena adds.

The draft of the Revised Master Plan (RMP) 2031 states Bengaluru city will require 4282 MLD per day. According to data obtained from the Cauvery Neeravari Nigama Limited, Bengaluru presently receives 1,450 MLD of water every day. The Master Plan proposes to bring in an additional 775 MLD to the existing supply through the Cauvery stage five project. In addition to this, the plan also proposes to bring in water from the Sharavathi, Nethravathi and Yettinahole rivers. It also suggested the revival of the flow of water in the Arkavathi River, rejuvenation of tanks and adoption of rainwater harvesting to recharge groundwater.

But Dr Sharathchandra Lele from ATREE is sceptical and notes that Bengaluru needs to move away from a single source and become more self-sustainable.

“It remains uncertain if these large projects will be implemented. We focus only on what happens inside Bengaluru. We forget how our water footprint affects people outside of the city. We have to manage our water needs within the water we are getting and this is not evident in the plan,” Dr Sharathchandra says.

“The planners have assumed that Cauvery stage five will be sanctioned and the city will get the additional 775 MLD. What if it does not get sanctioned by the tribunal? There is no plan B. Bengaluru has exhausted the legal limit of water it gets from Cauvery. If the projection of 4,282 MLD per day is true, then where do we get the rest of the water from? There are no figures in the draft RMP as to how much water they plan to get from outside sources, how much will be recycled, where it will be used,” Dr Sharathchandra states.

He argues that the draft RMP 2031 if implemented will end up disrupting local ecosystems and intensify water conflicts between regions.

“They have taken it for granted that a city with a current population of over 10 million, will become an area of 20 million people. We are looking far away for water and this will disrupt local ecosystems and river basins, creating more conflicts about whose water it is,” says Dr Lele.

Can Bengaluru be saved from the threat of running out of water?

Experts say that although Bengaluru may be on its way to running out of water, it is not too late to save the city.

“The main issue is not whether we get water every year but what happens in two or three consecutive dry years. We have been running the limits on Cauvery supply because the law makes drinking water the priority. However, Bengaluru is using water for all sorts of luxurious purposes like swimming pools and gardens. Hence, there is a need to strike a deal with farmers,” Dr Veena says.

She believes that a ‘drought compensation fund’ must be set up for farmers, which can be used in years of drought.

“In a really bad year, we can tell the farmers not to grow sugarcane because, practically, without Cauvery water, Bengaluru will come to a standstill. As we are using the water which is rightfully theirs, we have to compensate the farmers. Farmers grow cash crops for income. Hence, with the help of a drought fund, they will be compensated for crop loss. It makes sense for the city to compensate the farmers for the water it is using. This has never been done because there is no legal framework for it,” Dr Veena adds.

She says that instead of looking towards Sharavathi and Nethravathi as a solution, Bengaluru must concentrate on redoing its sewage system and flushing only treated water into the existing system of lakes.

“All our waste water is untreated and ends up smelling and catching fire in lakes. It is not considered as a source which can be recycled. The way we manage water, then yes, Bengaluru will run out of water soon but that does not mean that it is inherently doomed to run out of water.

There has to be a differentiation - how much water is used for drinking and basic domestic purposes. That must be supplied and for the water we use for luxury purposes, the farmers must be compensated by way of drought fund,” she adds.

Dr Veena states that another hurdle is that there is no legal framework which allows the usage of lake water for domestic purposes.

“The waste water must be treated and discharged into lakes. This has to further undergo secondary treatment before it is allowed to be supplied to homes. An integrated Cauvery and lake water supply can actually save Bengaluru. But legally, we are not allowed to use lake water for domestic purposes. If this changes, then there is scope for integrated water management in the city. However, planners have not gone through with it because it is an expensive plan. On the other hand, this plan will stop us from disrupting the ecosystems surrounding the Sharavati and Nethravati rivers,” she said.