

WATER CRISIS IN INDIA

Mother Nature or Mismanagement?

One of Chennai India's biggest reservoirs, Chembarambakkam Lake, is now a cracked, windswept mud flat. There are swarms of insects as big as hummingbirds, stray goats nibbling at dust-coated shrubs and what look like a few water buffalo — but no water. A massive pipe that's supposed to carry water into the city is empty.

There are similarly parched scenes at Chennai's three other main reservoirs. This city of nearly 10 million — India's sixth largest — has almost run out of water. Municipal taps work only a few hours a week. Trains are arriving every few days with emergency water supplies. Residents who can afford it buy truckloads of water from private tankers that carry it from bore wells — deep, narrow wells typically equipped with a pump — drilled farther and farther out into the countryside, way beyond the city limits.

But Chennai got about 30 inches of rain last year. That's more than London typically gets. So how did this happen? At his cramped office near Chennai's seafloor, Nityanand Jayaraman, an environmental activist, explains **"A reservoir is not just a pot. It has a catchment, and how you use or abuse the catchment also determines how healthy your reservoir is going to be,"** Jayaraman explains. The catchment is the surrounding area where rainfall can flow into the reservoir.

That's the problem at Chembarambakkam Lake, the city is India's Detroit.

"Around it, we've had intense development. So just [uphill from the reservoir] sits a very large special economic zone for automotive components and automobiles," he says.

That special zone houses a Hyundai automotive plant at Irungattukottai, an area that used to be part of the lake's catchment area. The factory uses rain and groundwater — for cooling machinery, washing vehicles and mixing with paint — that would otherwise flow into the reservoir.

On the other side of Chembarambakkam Lake is what used to be a farming area. It's called Senneer Kuppam, which means "place with pure water" in the local Tamil language. This is where, for generations, farmers used to irrigate with ample water from a shallow well, dug by hand. As recently as 10 to 15 years ago, one farmer says he had to dig just 10 feet down to reach water. Now his neighbors have had to drill 80 to 100 feet down to strike water. But renting a drilling rig is too expensive for him.

And as Chennai expands beyond its city limits, a superhighway has just been built through his once-sleepy village. Farmers are selling their land for development — or, during the current water crisis, becoming water merchants. Neighbors are drilling deep bore wells as an investment, making more money selling water than using it to irrigate crops.

A neighborhood group, comprised mostly of tenants are petitioning the Indian government to stop landowners from drilling bore wells and protect the community's access to water. Those who can afford it drill bore wells



has to conserve it better to last through the dry spells, Janakarajan says.

"Chennai is endowed with fantastic reservoirs, but they're encroached upon [by urbanization], clogged and silted up. The catchment areas are disappearing. There's no periodic maintenance," he says. **"I'm not saying climate change is a fiction. It's science; it's happening. But for all our mismanagement, all our inefficiency, please don't hide behind climate change."**

Janakarajan and many others accuse city and state officials of prioritizing growth and industry over residents' water supply.

The chief minister of Tamil Nadu, Edappadi K. Palaniswami (his position is similar to a U.S. state governor), has accused the media of **"creating an illusion"** of water scarcity based on **"some stray incidents"** but says the situation is under control. The state's

high court has nevertheless ordered his administration to submit a report explaining steps it has taken to mitigate the shortage.

In 2003, the state government did take action. Lawmakers passed the Tamil Nadu Groundwater Development and Management Act. It sought to regulate the numbers and locations of private bore wells by requiring landowners to apply for permits before drilling. It also mandated rainwater harvesting at all buildings. But the law was never really enforced and was repealed by an ordinance in 2013. The government has promised new legislation to replace it, but six years on, nothing has been passed.

In advance of that 2003 law, Tamil Nadu also commissioned Chennai's Rain Centre, a nonprofit organization inaugurated by the then-chief minister, to teach people how to harvest rain.

"Catch rain. It's free! That's our slogan,"

says Sekhar Raghavan, its affable 72-year-old founder and director. The exterior of Raghavan's office building is outfitted with drainage pipes. They run from the building's roof, down into an underground cistern to store rainwater.

But 16 years ago, when the state government first required residents to **"catch rain,"** Raghavan says it was a tough sell. Not many people were willing to invest in drain pipes and tanks.

"Nobody bothered about this! Now they have realized, there's no water to buy. So I get 20 to 25 calls every day," he says. People are desperate for advice, he says, on how to avoid buying water from expensive private tanker firms and how to collect it for free.

"This is a wake-up call for all of us," Raghavan says. **"Future droughts, future floods — they're only going to get more severe, because the city is developing, and getting more and more built up."**

We have to change our habits right now,"

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