

Waterless World

How melting Himalayan glaciers and Chennai's dry taps are connected

TIME WAS WHEN 'GLACIAL SPEED' used to mean 'very, very slowly'. That has changed forever. We know that our planet is warming. New research shows conclusively that Himalayan glaciers are melting at an alarming rate. Interestingly, a major source in the study by a team of four American scientists was film shot by US spy satellites during the Cold War. The film, which was declassified in 2011, spans the period 1975-2000, and covers 650 glaciers across a 2000-km stretch of the Himalayas from Spiti Lahaul to Bhutan. The scientists used digital elevation modelling (3D computer representation of terrain surface) to compare corresponding data for the glaciers for the period 2000-2016 from Japanese sensors carried by a NASA satellite.

They found significant ice loss over the 41-year period, "with the average rate of ice loss twice as rapid in the 21st century compared to the end of the 20th century". Joshua Maurer, the lead author of the paper, told the BBC that the average ice melt during this century was about eight billion tonnes annually, compared with four billion tonnes annually in the 1975-2000 period.

Ben Orlove, Professor of International and Public Affairs at Columbia University, told me the glacier melt feeding the rivers used to be equivalent to the snowfall in the high Himalayas. The faster melt rate now outstrips snowfall. This will mean a deceptive and temporary spike in water flow and groundwater levels, but longer-term, our biggest rivers will begin to shrink. Orlove said pollution has only a small effect on the melt rate. Rising temperatures are the bigger contributor. Greenhouse gases emitted around the world are quickly carried to the Himalayas by winds.

The glacier melt will affect the Ganga and the Brahmaputra, but these rivers are also fed by rainfall and snowfall. The greater impact might be on the Indus system (the Indus, Jhelum, Chenab, Ravi, Beas and Sutlej) shared by India and Pakistan.

Prime Minister Narendra Modi has vowed to tackle India's water crisis on a war footing, and promised piped water to every rural household by 2024 while focusing on conservation. He has created the new Jal Shakti ministry, merging the Ministry of Water Resources, River Development and Ganga Rejuvenation with the Ministry of Drinking Water and Sanitation. Is this going to turn the tide?

The track record during Modi's first term is depressing. Only one-third of sewage flowing into the Ganga is treated. An analysis by *Down To Earth* said not even a quarter of funds allocated to the Namami Gange project has been spent. Faecal contamination in cities in the Ganga basin was nearly 100 times the global standard.

Chennai's dry taps are an example of our poor water management. The state government is just stirring on water harvesting and desalination. All four of Chennai's reservoirs are dry. This year's monsoon is late and appears to be weak. As a recent World Bank article noted, half of India's annual precipitation falls in just 15 days.

We are the world's biggest consumers of groundwater, sucking up 25 per cent of global extraction annually. India is one of the world's most water-stressed countries. From about 3,000-4,000 cubic metres of water per person in 1950, we are now down to about 1,000 cubic metres. We must make sure we don't pour cold water on our children's dreams. **BW**



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