

Urban Climate Resilience: A Case for Used-Water Treatment

By Sahil Mathew.

The world is urbanising at a rapid pace. The United Nation's report, *World Urbanization Prospects: The 2018 Revision*, predicts that close to 70% of the world's population will reside in an urban area by 2050, placing an enormous burden on natural resources, especially water.

Reservoirs that are situated in the hinterlands of cities and supply piped water at a huge environmental and energy cost, are now a feature of most urban settlements. However, with a rapidly changing climate, these reservoirs have become increasingly vulnerable to droughts and flooding, while contributing almost 1.3% of global emissions, according to a study by the University of Alberta, Canada.

Though cities have a large constant demand for freshwater, nearly 70–80% of water supply flows away as used water. Often, urban rivers that run dry before entering the city leave with large surface flows, owing to the release of used water into the river! The safe and sustainable treatment and reuse of used water can reduce a city's dependence on large, climate-sensitive reservoirs, while increasing its resilience to climate change. Importantly, it can reduce the overall environmental footprint of cities, and offer an adaptation pathway that aligns with the principles of sustainable development.

Windhoek, the capital of Namibia, has been treating its used water for drinking purposes since 1968, making it drought resilient in one of the driest regions in Africa! Singapore, which has historically relied on water supplied from outside its boundary, has built an advanced central sewage treatment system that recycles its used water to meet almost 40% of its demand, while in Bangalore, India, used water undergoes secondary treatment and is sent to fill up lakes in the drought-prone hinterlands, where farmers use it for agriculture. Also, Israel recycles close to 85% of its used water for agriculture, making it one of the world leaders in used-water utilisation, according to its Ministry of Environmental Protection.

The options available for used-water treatment allow cities to make informed decisions, considering their financial capacities. Primary, secondary, and tertiary levels of treatment make used water available for agriculture, gardening and toilets, drinking, and precision industries, thereby augmenting their total water supply.

Given that the impacts of climate change will be felt acutely by cities, especially in the Global South, there is a need to adopt new processes — such as used-water reuse — to help secure their future.

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