

## PIPE DREAMS, GROUND REALITY

Relevant for: Developmental Issues | Topic: Health & Sanitation and related issues

Finance Minister Nirmala Sitharaman announced in July that the government will provide piped water to all rural households by 2024 under the Jal Jeevan Mission. This will be a costly and futile exercise since over 70% of India's surface water (rivers and lakes) and groundwater is polluted. The plan will require digging up the whole country and squandering lakhs of crores away for little gain. Since surface and groundwater is unfit for domestic use, Indians will soon need reverse osmosis (RO) for home, which will only burden the country's already expensive water programme.

It is then of utmost importance that we protect the few unpolluted sources of water that remain. Otherwise India will be consigned as a nation to drink unhealthy and expensive RO water. The only unpolluted sources of water that remain are the waters underlying the floodplains of rivers (for bulk water) and the subterranean natural mineral water underlying forest tracts (for drinking). These must be protected and conserved.

There are two non-invasive schemes which can perennially provide natural mineral water and unpolluted bulk water for our cities. These are strongly supported by Nobel Laureate A.J. Leggett and renowned scientist M.S. Swaminathan. We initiated the Yamuna Palla floodplain scheme for Delhi in 2009. It has been actively pursued by the Delhi Jal Board and provides quality water to more than a million people in Delhi. This local and sustainable river floodplain scheme can provide water supply for hundreds of river cities in India. It will be pathbreaking not only for India, but also the world. It will also yield great economic returns. Examples of self-sustaining floodplain water cities include Varanasi, Prayagraj, Agra, Mathura, most towns in Bihar and West Bengal, Cuttack, Bhubaneswar, Amravati, Vijayawada, Rajahmundry, and many cities in Tamil Nadu.

In the fitness of things it would be wonderful if this scheme could be flagged off in the Prime Minister's constituency of Varanasi where the floodplain on the eastern flank of the river Ganga can locally and perennially provide the entire water needs of the city.

Floodplains can be secured by planting organic food forests or fruit forests which don't demand or consume much water. Carving out lakes, as has been lately suggested, would require digging out vast quantities of sand. This will affect the wetland ecology of the floodplains. It will also cause loss of water due to evaporation.

The other source of unpolluted water is natural mineral water that underlies forests. This water is of the highest international quality. Unpolluted rain falls on the forest, percolates through the humus or leaf cover on the forest floor while picking up nutrients, and then through the underlying rock while picking up minerals. It finally settles in underground aquifers. This is natural mineral water. Since this is high-quality natural mineral water purely for drinking, we need only 2-3 litres a day. Most of the country can still source this water.

All our cities in the sweep of the Western and Eastern Ghats have such forest aquifers. The hills around Visakhapatnam can provide enough water for millions of people. Shimla has a forest mineral water sanctuary spread over nearby hill ranges. This was set up before Independence to provide the city with water. Bengaluru's Bannerghatta forest sanctuary and Mumbai's Sanjay Gandhi National Park have underground forest aquifers that can supply natural mineral water for the entire population of Bengaluru and Mumbai. So can the Delhi Ridge, for Delhi. Even the Aravallis can provide the best quality natural mineral water to all the cities in Rajasthan.

However, taking more water than nature can recharge every year will be damaging. We need healthy and perennial 'conserve and use' solutions for the future.

As of now Himalayan mineral water sells at 45 a litre. The forest aquifer scheme can provide mineral water countrywide for a billion people. It can be distributed at nominal charge, 2-3 a litre, through Mother Dairy kiosks and other outlets as its total cost would be economical compared to bottled RO water.

Most importantly, the water levels of the floodplain aquifers need to be monitored scrupulously to be well above the river water level to avoid contamination by river water. We must maintain stable water levels for the subterranean forest aquifers to ensure sustainability. We need to declare the floodplains and forest aquifers as water sanctuaries similar to national parks and tiger reserves. If not, we will lose this amazing gift of natural infrastructure, as has already happened in some cases.

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