The lowdown on falling water reserves

India's groundwater resources have been overexploited, as experts have been warning for some time now. According to a sample assessment in 2011, groundwater in 19 of India's 71 districts — about 26% — were critical or exploited, meaning that nearly as much or more water was being pulled out than their reservoirs' natural recharge ability. In another assessment in 2013, they included groundwater blocks in districts that had gone saline, and this percentage was up to 31%. Groundwater is exploited unequally. The maximum overdraft is in the northwestern States of Rajasthan, Punjab and Haryana. The latter two are key wheat granaries and, despite developed canal-networks, rely extensively on groundwater. The overall contribution of rainfall to the country's annual groundwater resource is 68%, and the share of other resources, such as canal seepage, return flow from irrigation, recharge from tanks, ponds and water conservation structures, taken together is 32%. Moreover, the population increase has meant that the national per capita annual availability of water has reduced from 1,816 cubic metre in 2001 to 1,544 cubic metre in 2011, a 15% reduction.

There are many reasons for the decline. Statistics show that right from the mid-1960s, India's canal network was not keeping pace with farmers' water demand. Therefore, many of them started installing tubewells to keep up with the needs of Green Revolution-crops that required more water and fertilizer. Free electricity, to pump this water, too helped. Over the last two decades, an overall decline in the quantum of pre-monsoon rainfall has increased dependence on groundwater. For instance, India has registered a sharp decline in its pre-monsoon rainfall this year. Between March 1 and the first week of May, the country should have got at least 70 mm of rain, but has only got 55 mm, or a 20% deficit. The immediate signs of deficit are visible in water storage.

According to figures from the Central Water Commission, India's key reservoirs are, as of this week, 10% short of their decadal average for this time of the year. Less water from these sources means increased pressure on India's groundwater reserves for irrigating the summer crop, and drinking and industrial use. The fracas between Tamil Nadu and Karnataka over sharing of Cauvery waters also has a groundwater angle. The Supreme Court, in a major judgment in February, directed that Tamil Nadu use 10 TMC (thousand million cubic feet) of its groundwater instead of banking on Cauvery waters from Karnataka. The judgment even said groundwater, if not extracted regularly, "would be wasted," thus sanctioning the use of groundwater as a reserve to be exploited at will.

Other than groundwater being a reserve to be used judiciously, over-exploitation poses health risks. West Bengal, Odisha, Uttar Pradesh, Bihar and Jharkhand face severe problems of arsenic contamination, and one of the causes is drawing water from increasingly greater depths. Punjab and Haryana have for years reported a spike in cancer cases owing to chemical fertilisers leaching into the soil.

There have been several attempts to get the States to use groundwater more responsibly. The Centre has a 'model' groundwater Bill that is not binding on the States. However, 11 States and four Union Territories have adopted it. But the legislation has had limited impact on groundwater exploitation. Last year, the Union Water Ministry brought in a Bill that would require various classes of users to pay for the groundwater they use. More importantly, it tries to change how groundwater is viewed as a resource. Currently, the owner of a piece of land is deemed the owner of the groundwater below it. This Bill attempts to put the State as the custodian of the groundwater. It remains to be seen whether the States will come around to this perspective.

Jacob Koshy

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