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India faces a severe groundwater crisis



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The groundwater clock is ticking towards day zero. India needs a combination of strategy and investment to safeguard and revitalise the same



According to the India Water Portal, India uses 25 per cent of all groundwater extracted globally, ahead of the USA and China. Nearly 70 per cent of the water supply in Indian agriculture today is groundwater. For a resource that is under such heavy use, India still lacks a contingency plan when it comes to dealing with groundwater depletion and over-exploitation. Predictably, the writing on the wall is becoming increasingly clear. On June 19th, 2024 the Central Ground Water Board (CGWB) dropped the shocking news that Delhi has already extracted 99 per cent of its available groundwater. The latest CGWB report revealed a decline in both annual recharge and available groundwater for extraction in the city. According to the CGWB's findings, Delhi's net annual groundwater recharge in 2023 was measured at 0.38 billion cubic meters (bcm), with only 0.34 bcm available for extraction. Shockingly, nearly all accessible groundwater has already been extracted, totalling 99.1 per cent. The concerning aspect here is the increased rate of extraction despite reduced groundwater recharge. These trying conditions come at a time when Delhi is already reeling under the worst heatwave in the last 120 years which has claimed 192 lives so far. Sadly the issue of water distressed cities is becoming a worrying trend across India. Bangalore hit rock bottom earlier this year with over 500 million litres of water deficit daily with over 7000 borewells running dry. Coupled with abnormally harsh summers the water scarcity conditions can not only take a toll on human lives but also bring the urban economy to a grinding halt. This trend of drying up groundwater may, unfortunately, become the norm for



INDIA'S WATER RESOURCES FACE A BLEAK FUTURE; THE GOVERNMENT MUST ENSURE SUSTAINABILITY THROUGH A NATIONWIDE WATER BODY CENSUS, RAINWATER HARVESTING AND INNOVATIVE TECHNOLOGIES

most cities in India unless urgent remedial measures are taken. But sadly, most of the action taken is at best knee-jerk and impulsive with neither long-term strategy nor investment attached to it. Consecutive Governments, both at the State and central levels have always dealt with groundwater-related issues on a passive basis instead of a proactive basis. As a result every year the nature of the problem not only becomes complex but also more difficult to solve.

The future of India's water resources looks bleak and the Government must deploy a plethora of measures to ensure that the future generations have enough of this precious resource. As a first step, the central Government must conduct a nationwide satellite-assisted natural water body census along with the measurable extent of the water body. This will not only quantify the number of water bodies but will also capture any encroachment of the same. Additionally, steps have to be taken to rejuvenate and revive these water bodies. This can be done by removing the vegetation and setting up artificial groundwater recharge points such as percolation wells. Apart from this, the roping in of local municipal authorities, especially the anti-encroachment departments can help remove unauthorised occupation from the water body area.

The central Government in association with State Government authorities can work on measures

such as metered borewells to monitor and regulate groundwater extraction. The concept of metered borewells is not new. The State of West Bengal has metered borewells for a while now and as a result, the State has been experiencing better levels of ground water. The same can be replicated across India, especially in Karnataka which is witnessing over-exploitation of groundwater. Yet another measure that needs sincere application is rain-water harvesting (RWH). Even though a much-talked-about concept, RWH has seen minimal implementation in India.

Bangalore is an apt example of the abysmal application of RWH. According to Bangalore Water Supply and Sewerage Board (BWSSB) data, only 1.8 lakh out of the 19 lakh eligible properties in Bengaluru have installed rain-water harvesting systems. Experts have opined that the city harvests only 10 per cent of the rainwater while the rest 90 per cent drains away wasted. Conditions such as these point towards the unfortunate reality of hyped concepts that receive very little implementation. The Government must try and understand the latent potential of RWH and ensure that not only residential but commercial properties across India implement RWH and the same must be enforceable by law.

However conventional remedial measures may still not be able to rein in the runaway groundwater scarcity problem. Since the scale of the problem has risen, the Government must explore invest-

ments in innovative technologies to bolster the efforts to revive and boost the groundwater table in India. Efficient farming technologies that rely less on water for instance can make a huge difference.

Investments in precision agri-technology for the usage of groundwater for irrigation are an ideal solution for providing optimal water usage. This saves water compared to traditional flooding methods which increases output while conserving resources and reducing water wastage.

Similarly, App-driven water meters that automatically regulate extraction and smart groundwater pressure sensors that maintain critical and minimum water levels can all help alleviate the burdens weighing on groundwater. With water scarcity spreading region-wise across India and with a rapidly increasing water use the structural imbalance between water supply and demand continues to widen. Therefore it is time that the Governments in association corporate under corporate social responsibility schemes (CSR) must increase capital expenditure on smart technologies that can actively provide solutions to water scarcity and water quality issues besides improving sustainability of water resources.

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(The author is a policy analyst. The views are personal)