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Revitalise our aquifers: India can be water secure, but for that we need to act urgently

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Rohini Nilekani and Mala Subramaniam

This parched country will be blessed with rain soon. It is the final but worst stretch of the hot, dry summer. A good time to commit that, post monsoon, we will never forget one of the most widespread droughts in recent memory.

Three years running, many states have declared drought conditions. A normal monsoon may come soon. But what about the following years? Climate scientists warn us of severe variability. India may be water stressed as early as 2025.

Can we de-risk from this uncertainty? We can if we innovate on solutions. Few countries of this size and population have faced water challenges of this scale ever before. Existing models from the developed world will not work for us.

We believe that one of the best places to begin is with better ground water management. India is a ground water civilisation. For millennia, people have used ingenious and elegant structures to use and replenish water in shallow aquifers, creating a reliable, widespread, cost effective and democratised water infrastructure. We need to build on that knowledge, to ensure that the country's aquifers become a dependable local resource, especially when the monsoons fail.

Ground water is people's water and is loosely regulated. Constitutionally, water is a state subject, and despite the Union government's intentions to bring about a pan-India ground water law, most state governments exercise little control over this common pool resource.

We believe this lack of regulation has created both a crisis and an opportunity. India draws more groundwater per annum than the US and China combined. This crisis comes from unsustainable over-extraction, perversely incentivised by agricultural subsidies and energy mismatches. That is a story familiar and oft repeated.

The opportunity is less understood.

Approximately 30 million, mostly private wells in the country offer an opportunity to use ground water wisely, without the financial and ecological issues that come with both small and large-scale surface water transfers.

Groundwater supplies around 70% of all our water needs across agriculture, industry and domestic water. Ironically, most public investments have been made in surface water – dams and canals for irrigation, pipelines for water to industry and to cities. Enough data suggests this approach yields diminishing returns.

We believe therefore that it is smarter and safer to focus on ground water. Unfortunately, people abstract ground water as if it were an infinite resource, because it is invisible.

What happens if you make this invisible water visible? What if you give people scientific tools to understand ground water as a finite but renewable resource? Can they manage it better, making the right trade-offs between demand and maximum renewable supply?

We believe they can and will, with a little help.

Let's look at direct examples of successes.

In Maharashtra ACWADAM, an NGO founded by hydro geologists, experimented in a few communities to seed data-driven collective action for water security. Communities mapped their aquifers, understood water availability and developed protocols for water usage. Resolutions passed by their panchayats formalised these social protocols. Within three years, the community's drinking water and agricultural needs were secured. This work has now scaled up into the state's Jal Yukta Shivar scheme.

Another story from India's biggest and most arid district: Kutch. Here, most people depend on irregular tanker supplies for lifeline water. A combination of interventions by NGOs ACT and SAMERTH, ranging from deepening of "talaabs", construction of new wells, reclaiming abandoned wells, constructing roof top rainwater harvesting or recharge structures helped many communities become water secure. Result? Most have not called for tanker water as late as April 2016.

Surprisingly, Kerala has severe problems too. Despite high rainfall, communities in Thrissur district suffered from groundwater depletion and salinity ingress in their open wells. The district administration initiated a shallow aquifer recharge programme called "Mazhapolima" through which rain was directed from rooftops to ubiquitous wells with simple filtration. It worked. People's well water rose significantly. This campaign has now scaled across the state as the "Jalsuraksha" programme.

One last illustration. In Rangareddy and Mahboobnagar districts of Telangana, farmers learnt to pool existing bore wells to extract groundwater more equitably and efficiently. Working with NGO WASSAN, these farmers arrived at water sharing norms to ensure critical irrigation for all.

Groundwater increased by two metres in three years and the irrigated area doubled. This practice of bore well pooling is now actively supported in the state Indira Jala Pradha scheme.

There is no space here for the many other similar results we have from around 500 installations around the country, resulting in direct benefits to lakhs of citizens.

So what does it take to scale this work?

Public funds can enable rural communities to use good science to understand aquifers, and build their capacity to manage those aquifers as renewable resources and not as inexhaustible taps. Let's activate these public funds.

This is certainly not a quick fix. We estimate it takes at least two years of the annual hydrological cycle for people to see the benefits from making the necessary trade-offs.

We do not have many options today. Let's learn from what has worked. Let's revitalise our aquifers. They are the lifeblood for future water security.

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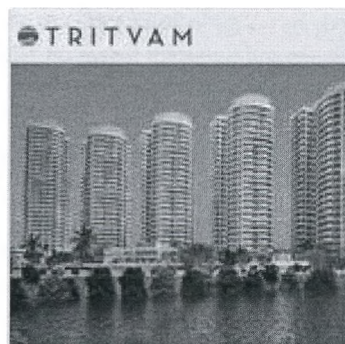
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