

Making dam water reach the farmer

Intervening in a debate in the state Assembly on July 21, 2015, the Chief Minister of Maharashtra remarked that the state has 40 per cent of the country's large dams, "but 82 per cent area of the state is rainfed. Till the time you don't give water to a farmer's fields, you can't save him from suicide. We have moved away from our vision of watershed and conservation. We did not think about hydrology, geology and topography of a region before pushing large dams everywhere. We pushed large dams, not irrigation. But this has to change."

Devendra Fadnavis accurately sums up the great tragedy of Indian irrigation. For 70 years since Independence, we have continued to build "the temples of modern India" but recurrence of droughts and water shortages only seems to intensify by the day. We have spent more than ₹400,000 crore on their construction but trillions of litres of water stored in these dams is yet to reach the farmers for whom it is meant. As former Prime Minister Manmohan Singh would say, "the outlay-outcome gap" keeps widening. In irrigation-specific terms, this is the growing divergence between the irrigation potential we have created (113 million hectares) and how much of this potential we have actually utilised (89 million hectares) for the purposes for which it was meant.

Bridging this gap has to be the goal of the second set of key reforms needed in India's water management. This gap of 24 million hectares reflects the failure of our irrigation sector but it is also a massive low-hanging fruit, by focusing on which we could quickly add millions of hectares to irrigation. And we could do this at less than half the cost of building new dams, which are becoming more and more unaffordable, with massive delays in completion and an unbelievable cost overrun of 1,382 per cent in major projects and 325 per cent in medium dams, on an average! Which is quite apart from their humongous human and environmental costs.

Major river basins like Kaveri, Krishna, Godavari, Narmada and Tapti have reached full or partial basin

closure, with few possibilities of any further dam construction. In the Ganga plains, the topography is completely flat and storage cannot be located there. Further up in the Himalayas, we have one of the most fragile ecosystems in the world, comparatively young mountains with high rates of erosion. Their upper catchments have little vegetation to bind the soil. Rivers descending from the Himalayas, therefore, tend to have high sediment loads. There are many cases of power turbines becoming dysfunctional following siltation. Climate change is making the predictability of river flows extremely uncertain. Diverting rivers will also create large dry regions, with adverse impact on local livelihoods. The neo-tectonism of the Brahmaputra valley, and its surrounding highlands in the eastern Himalayas, means that modifying topography by excavation or creating water and sediment loads in river impoundments can be dangerous. Recent events in Uttarakhand and Nepal bear tragic testimony to these scientific predictions.

We, therefore, need urgent reforms focused on demand-side management, leaving behind our obsession with ceaselessly increasing supply, which has sadly been fuelled also by the political economy of corruption.

These reforms have already been tried and tested in many part of the globe: advanced nations such as the US, France, Germany, Japan and Australia; East and South Asian countries like China, Sri Lanka, the Philippines, Indonesia, Vietnam and Malaysia; Uzbekistan and Kyrgyzstan in Central Asia; Turkey and Iran in West Asia; African nations such as Mali, Niger, Tanzania and Egypt, as also Mexico, Peru, Colombia and Chile in Latin America. But even more significant are the successful examples of reform pioneered within India in command areas like Dharoi and Hathuka in Gujarat, Waghad in Maharashtra, Satak, Man and Jobat in Madhya Pradesh, Paliganj in Bihar and Shri Ram Sagar in Andhra Pradesh. These successes have now to be taken to scale.

Reforms here imply a focus on better management and last-mile connectivity. This requires the de-bureaucratisation or democratisation of water. Once farmers

themselves feel a sense of ownership, the process of operating and managing irrigation systems undergoes a profound transformation. Farmers willingly pay irrigation service fees to their Water Users Associations (WUAs), whose structure is determined in a completely transparent and participatory manner. Collection of these fees enables WUAs to undertake proper repair and maintenance of distribution systems and ensure that water reaches each farm.

This kind of Participatory Irrigation Management (PIM) implies that the state irrigation departments only concentrate on technically and financially complex structures, such as main systems, up to secondary canals. The tertiary-level canals, minor structures and field-channels are handed over to the WUAs, which enables better last-mile connectivity and innovative water management. This includes appropriate cropping patterns, equity in water distribution, conflict resolution, adoption of water-saving technologies and crop cultivation methods, leading to a rise in overall water-use efficiency, which is among the lowest in the world in India.

Of course, PIM is not a magic bullet and studies across the globe reveal specific conditions under which, and under which alone, PIM works. These need to be carefully adhered to. While these are issues for the states to tackle, the Centre also has a critical role in incentivising and facilitating states to ensure that they undertake these reforms. Release of funds to states for large dam projects must be linked to their progress on devolutionary reforms and empowering WUAs. In the 12th Plan we had proposed an incentive fund specially created for this purpose. States committed to the national goal of "*har khet ko paani*" will not view this as an unreasonable imposition. And to overcome any apprehensions, the Centre should also play an enabling role, helping officers and farmers from different states to visit pioneering PIM proofs-of-concept on the ground, so that they can learn and suitably adapt them to their own command areas.

If these reforms are effectively implemented, millions of hectares can be quickly added to irrigated area, at very low cost, without even building a single new dam.



WATER: REFORM OR PERISH

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