Planning of Water Management Practices in India

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Ecologist Jayanta Bandyopadhyay once wrote that water, not oil, was the resource whose availability and quality would determine India's future. I recalled that remark when reading a report recently submitted to the Centre (A 21st Century Institutional Architecture fro India's Water Reforms). Rigorously researched and closely argued, this report displays a deep familiarity with social and economical life across India, and offers a set of forward-looking recommendations as well. It is by far the best sarkari report I have read in years.

Some alarming facts listed by the report include: "If the current pattern of demand continues, about half of the demand for water will be unmet by 2030"; "Water tables are falling in most of the parts of India"; "60% of India's districts face groundwater over exploitation and /or serious quality issues; There is fluoride, arsenic, mercury, even uranium in our groundwater"; "Average cost over-run is as high as 1,382% in major irrigation projects and 325% in medium projects"; "Water use efficiency in agriculture in India is among the lowest in the world; it is 25-30%, whereas in China it is twice as high"; "The single most important factor explaining the drying up of India's peninsular rivers is the over-extraction of groundwater"; "Cities produce 40,000 million litres of sewage every day and barely 20% of it is treated".

The report identifies several kinds of water crises in India. First, that water stored in large dams is not reaching the farmers for whom it is meant. Second, that groundwater resources are now being rapidly depleted and polluted as well. These two crises threaten the sustainability of agriculture. But there is a thrid, emerging crisis; caused by rapid industrialisation and urbanisation. Cities and factories draw on the water resources of the hinterland, leading to conflicts between town and country. They also use these resources extremely carelessly.

The report makes many sensible suggestions to resolve these crises. It argues that water management is too important to be left to engineers alone; rather, it needs inputs from a wide variety of academic disciplines, including ecology, economics, sociology, and climate science.

Second, the present license-permit-quota-raj system of water allocation, which gives the State and its functionaries a dominant role, must give way to a more participatary system, in which farmers and other end-users have a critical say in how water is allocated and used.

Third, there must be, at both a conceptual and practical level, integrated policies for surface water and groundwater. The report identifies a disease named "hydro-schizophrenia", whereby the "left hand of surface water does not know what the right hand of groundwater is doing." A fourth recommendation, aimed at the private sector, is that it must be made mandatory for all companies to include details of their water footprint in their annual reports.

The report observes that the two bodies currently in operation, the Central Water Commission (CWC) and the Central Groundwater Board (CGWB), have valuable expertise and knowledge. Yet both agencies remain rooted in the 20th century. They still operate on the "build-neglect-rebuild" model, which has outlived its utility. Water management now needs to follow a demand-side rather than supply-side approach, actively involving end-users, while eschewing a one-size-fits-all model in favour of one that recognises regional variations in natural resources endowments, social structures, and livelihood patterns.

The report thus recommends a new institutional architecture for water management in India, whereby the CWC and CWGB would be merged into a new national water commission. The report contains a detailed outline of what this new commission would do; what kind of origanisational design it would have, what experts it would need to recruit, and what policies it might execute.

Notably, the report stresses that the new commission should have a "strong regional presence in all the major river basins of India". The country has 22 major river basins; remarkably, at present there are 11 river basins in which neither the CWC and CGWB has an active research centre. Once established, this new commission will overcome this deficiency; further, it will operate in a genuinely holistic fashion, so that in each of these river basins, goundwater and surface water are treated in an integrated manner. Perhaps the planning commission needed to be disbanded. But a new water commission along the lines recommended here definitely needs to be created. Sadly, except for a round-table in the Economic and Political Weekly (December, 2016) this report has not got the public attention it deserves.

Our media is obsessed with the winning and losing of elections; whereas the truth is that the use and abuse of water is even more critical to India's economic, social, political, and civilisational future.

— RAMACHANDRA GUHA

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Water planning in India has been on an unsustainable path for centuries. In the 16th century, Mughal Emperor Akbar decided to build a new capital in Fatehpur Sikri (City of Victory). In 1589, Robert Fitch, one of the earliest English

travellers to India, noted that Agra and Fatehpur Sikri were "two great cities, either of them much greater than London and more populous".

The history of the new capital was not so auspicious. Akbar used it only for 13 years and then abondoned it to return to his old capital permanently. The main reason was very severe water scarcity.

Fatehpur Sikri is a magnificent monument to India's poor water planning. Over the centuries India's water planning has improved incrementally whereas its drivers of water use have increased exponentially, making its water situation worsen steadily with time.

Take population, only one driver of increasing water use. In 1947, the total population of undivided India was 390 million. By 2050, total population of the three countries of undivided India will be 2,206 billion, a 5.66 fold increase in little over a century. India is expected to overtake China around 2022 as the most populous country in the world.

Population growth, rapid urbanisation and industrialisation and exponential growth in human activities over the past century, have resulted in higher water requirements for all types of water uses: human, thermo-industrial and agricultural. Furthermore, all water bodies within and near population centres have already been contaminated seriously with domestic and industrial pollutants. This has posed serious health and environmental problems.

In addition, with steady economic growth, higher literacy and increasing skill levels, the number of Indian middle class families has gone up exponentially. The median income of Indian households is expected to reach over $10,000, by 2030, in 2014 prices. Direct results of this affluence have been rapid changes in dietary patterns and energy consumption levels. As the country has prospered, people have moved to a higher protein-based diet like milk products, fish and meat, all of which need significantly more water to produce than cereal-based diets. Their energy consumption has gone up because of increasing use of refrigerators, washing machines and cars. All these need extra energy and no energy can be generated without significant amount of water.

In terms of water, the country now is facing a perfect storm. This means water management practices in India need to change dramatically in the coming years. However, we do not see any sustained political will which will be essential to take some hard decisions in the future.

The problem is further exacerbated by the fact that all important rivers in India are interstate, and water management is basically a state subject on which the Centre has very limited control.

Because of poor water management in all the Indian states and steadily increasing water demands, India is now witnessing increasing conflicts on water allocations in interstate rivers. This has become a serious challenge to the regional stability of the country. Interstate water allocation conflicts have triggered numerous protests, violence and property destructions. If these conflicts continue and grow , they may prove to be one of the biggest political contraints to India's future economic growth and social cohesion.

A major challenge now is the absence of permanent and efficient dispute resolution mechanisms for water allocation in interstate rivers. Under the Interstate Water Disputes Act of 1956, ad hoc tribunals can be established on a case by case basis whenever conflicts between two states cannot be resolved by mutual discussion. The objective of this Act was to allow the states to discuss and resolve the conflicts before engaging in adjudication.

Our research indicates that tribunals have often contributed to long-drawn negotiation processes which have led to hardening of the positions of the individual states, instead of promoting compromises.

There are several problems with the existing tribunal system. First, there are no uniform, logical and common processes. They have considerable directions in terms of processes to arrive at settlements as also underlying concepts under which settlements are made. Fundamental assumptions have often varried from one tribunal to other significantly.

Second, tribunal results are non-binding to the states.

Third, the Centre has been reluctant to establish institutions for implementing the awards.

Fourth, there is no fixed stipulated time frame for negotiations and adjudications. The Cauvery Tribunal took17 years. Karnataka then promptly decided to file a Special Leave Petition to the Supreme Court to thwart the final award, further delaying the settlement.

An important factor linking water disputes to state politics is the power of state campaigns in distracting voters from real issues of poor governance and lack of administrative skills and actions. Water has now assumed the role of a political weapon.

With a number of states defying orders of tribunals and Supreme Court, water is becoming an important threat to India's federalism and future social and economic development.

In the absence of functioning water institutions at central and state levels and lack of political will to take hard decisions at all political levels, interstate water allocation problems will become increasingly more difficult to resolve. It proves Mark Twain's adage " Whiskey is for drinking, water is for fighting over."

—ASIT K. BISWAS, CECILIA TORTAJADA and UDISHA SAKLANI