

FURTHER STRESSED BY THERMAL POWER

Relevant for: World & Indian Geography | Topic: Distribution of key natural resources - Water Resources incl. Rivers & related issues in world & India

The Composite Water Management Index (CWMI) by the NITI Aayog, which was released this June, shows that 600 million people face high to extreme water stress in India. The report, which was published in association with the Ministry of Water Resources, Ministry of Drinking Water and Sanitation and the Ministry of Rural Development, places India at a dismal 120 among 122 countries in the water quality index. It predicts that a persistent water crisis will lead to an eventual 6% loss in the country's Gross Domestic Product by 2030.

A significant key to this stress is the vast gulf — of about 1498 billion cubic metres (BCM) versus 744 BCM — that has been predicted between the demand and supply of fresh water, by 2030. In the projections that the Central Water Commission (CWC) released in 2015, the sector-wise requirement of water (that is, for drinking and domestic use, industry and energy) will rise steeply between 2030 and 2050.

This mounting rise in demand is starkly evident in the energy sector, which is key to India's ambitious developmental plan. The share of water consumed by this sector was 0.62% in 2010, which is pegged to rise up to 1.37% in 2030 and 8.98% in 2050.

The CWMI report covers these broad themes — ground water and surface-water restoration; major and medium irrigation; watershed development; participatory irrigation management; on-farm water use; rural and urban water supply; and policy and governance. The projected water demand of the energy sector makes it an important point for the NITI Aayog to consider while bringing out future iterations of the CWMI.

Here are some facts to mull over. As per the Central Electricity Authority (CEA), March 2018, thermal electricity accounts for more than 86% of India's total power generation. Analysis shows that 77% of India's total electricity comes from thermal power plants that are dependent on freshwater sources. Of all the freshwater-cooled thermal plants, 38.9% of generation capacity is installed in areas with high or extremely high water-stress. By 2030, more than 70% of India's existing thermal power utilities are likely to experience an increased level of water competition from agricultural, urban, and other industrial demands.

As the power sector consumes more water, competition between power and the other thirsty players is only likely to increase — a factor that future editions of the CWMI will have to consider.

The CWMI also raises three main issues related to data: limited coverage, unreliable data and limited coordination and sharing. Measuring water consumption by power plants has been a challenge for long. However, it can easily be tackled by using the existing CEA reporting mechanism for daily generation. To do so, daily water withdrawal and consumption reporting should be mandated. These can be measured with existing technology and added into this reporting framework.

Such information will also help in implementation of the Ministry of Environment, Forest and Climate Change Notification (dated December 7, 2015), which mandates specific water consumption norms for existing and new thermal power plants.

In addition, information about water stress, power plant siting (location) and so on must be

shared seamlessly across departments — a service that the CWMI could perform. The NITI Aayog alludes to this while describing the CWMI: “This Index is expected to establish a public, national platform providing information on key water indicators across states. This platform will help in monitoring performance, improving transparency, and encouraging competition, thereby boosting the country’s water achievements by fostering the spirit of ‘competitive and cooperative federalism’ among the states. Further, the data can also be used by researchers, entrepreneurs, and policymakers to enable broader ecosystem innovation for water in India.”

The CWMI concludes by noting that water-scarce States such as Gujarat, Madhya Pradesh, Andhra Pradesh, Karnataka, Maharashtra and Telangana are leaders in the Index. It notes that this is “likely driven by necessity in the face of looming water shortages”. Factoring in the water-energy nexus linkages, especially the metrics around power plant water withdrawal and consumption, will only help make the Index better and the States better prepared to manage their water and power resources.

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