WATER CRISES

INDIA'S MAJOR AND SERIOUS CHALLENGE BY 2030

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After two consecutive years of weak monsoons, 330 million people – a quarter of the country's population - are affected by a severe drought. With nearly 50 per cent of India grappling with drought-like conditions, the situation has been particularly grim this year in western and southern states even Uttar Pradesh that received below average rainfall. As per Niti Aayog reports in 2018, 21 major cities (Delhi, Bengaluru, Chennai, Hyderabad and others) are racing to reach zero groundwater levels by 2020, affecting access for 100 million people.

The Composite Water Management Index (CWMI) report states that by 2030, the country's water demand is projected to be twice the available supply, implying severe water scarcity for hundreds of millions of people and an eventual six per cent loss in the country's GDP. As on today, 12 per cent of India's population is already living the 'Day Zero' scenario that happened due to excessive groundwater pumping, an inefficient and wasteful water management system and years of deficient rains. Further, the report predicted that 21 Indian cities will run out of the ground water(which is the main source of water in most Indian cities) by 2020, nearly 40% of population will have absolutely no access to drinking water by 2030 and 6% of India's GDP would be lost by 2050 due to water crisis. Just one year after the release of this report, the Government has announced an ambitious target of providing piped clean drinking water to all rural households by 2024. Although a worthy goal, it is unclear how the government proposes to achieve this formidable target under the current circumstances.

The ministry has set a tough target at a time when hundreds of millions don't have access to clean water. Aiming at laying huge pipeline networks for water supply means that yet again, we are giving more preference to infrastructure. Also, the biggest questions are: **i).** What will happen if there is no water to supply? and **ii).** What will happen to all the wastewater that gets generated?

This indicates that there is a clear disconnect between water, society and economy. Currently, we are interested in laying large networks, constructing huge storage dams, fetching water from 150 kilometers

and above, which involves a huge carbon footprint. We are valuing land more than water, neglecting our local water bodies, which have either gone dry or encroached. Also, in many Indian cities, water is not properly distributed. Some areas of mega cities like Delhi and Mumbai are privileged to get more that than the standard municipal water norm of 150 litres per capita per day (lpcd) while other areas get 40-50 lpcd.

The World Health Organization (WHO) states that an individual requires around 25 litres of water daily for meeting his/her basic hygiene and food needs. The rest is used for non-potable purposes like mopping and cleaning. This indicates that for most of the non-potable uses, a quality lower than drinking water is required. Thus, for economic efficiency and environmental sustainability, water must be treated and supplied according to usage. To top this, are issues of leakage losses, water pricing and metering of water. Lack of proper maintenance of existing infrastructure causes further losses of almost 40 per cent of piped water in urban areas.

Why this water scarcity arose?

In order to address India's water problems, it is important to understand that the roots of the current water crisis do not lie in a deficient or delayed monsoon as is being made out by the Indian media. In fact, it is years of government neglect, wrong incentives and outright misuse of the country's water resources which has led to the current crisis. Moreover, it is important to understand that climate change would exacerbate India's current water scarcity in the coming decades. According to a report by the World Bank, a global mean warming of 2°C above pre-industrial levels, the mismatch between water demand and supply will increase dramatically and will have serious implications on India's food security. Although, the country has witnessed a dramatic increase in water deman d for all uses: agricultural, industrial, and domestic, agricultural irrigation accounts for 90% of India's freshwater withdrawals. Therefore, any serious effort towards water management in the country should focus on the management of agricultural irrigation in India. India's annual agricultural water withdrawal is the highest in the world followed by China and the United States (Table 1). Further, the table shows that China, which has a larger area equipped for irrigation (69 million hectares) than India (67 million hectares), withdraws much less water for agricultural purposes. This is clearly inefficient and off course unsustainable.

Countries with the largest agricultural water withdrawals

Country	Agriculture Water Withdrawals (billionm^3)	Total Water with drawals (billion b^3)	Share of Agriculture Water Withdrawal in Total Water Withdrawal (%)	Area Equipped For Irrigation (in ha)
India	688	761	90	61
China	358	554	65	69
United State	175	486	40	26
Pakistan	172	184	94	20
Indonesia	93	113	82	07

Source : World Bank (2018)

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