



## Water Stress In India

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*This article is based on “Let the water flow, quickly” which was published in The Economic Times on 12/03/2020. It talks about the status of water stress in India.*

Depletion of water resources due to overuse and decline in water supplies due to climate change is pushing India closer to the tipping point of water scarcity. Apart from these, several government policies especially pertaining to Agriculture (minimum support price), also resulted in over-exploitation of water. These factors make India a water-stressed economy. In this context, for sustainable utilization of the stressed water resource, there is a need for follow-through action under the framework of cooperative federalism and citizen activism.

## Status of Water Stress in India

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### **Ground Water**

India has the dubious distinction of being the world’s largest user of groundwater by far, even as the water table has been falling by an average of 0.4 m nationally. Reports from Bihar suggest that the water table there has fallen by several feet of late. Well, over half of the districts in the state are facing or expected to be facing severe groundwater over-exploitation.

### **Surface Water**

- One recent report mentions that over 70% of surface irrigation water is being simply wasted, nationally.
- Given suboptimal command area development and distribution of water in ill-maintained (and uncovered) canals, leads to the suboptimal utilization of water infrastructure and often results in heavy soil erosion and siltation.

### **Monsoon**

- A recent report by the Ministry of Earth Sciences (MoES) shows a 'significant' drop in rainfall in Uttar Pradesh, Bihar and West Bengal over the past three decades, and rising variability in the monsoons nationwide.
  - Also, the hydrological conditions vary widely across regions. While some are drought-prone, others witness recurring floods.
- Although annual precipitation is adequate (at about 4,000 bcm), the natural run-off available is much less.
  - Geological factors like steep slopes contribute to the lesser usability of the rainwater.

## Reasons for Water Stress in India

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- **Over-exploitation:** The figures suggest that groundwater provides for over two-thirds of irrigation requirements. In the last four decades, about 85% of the total addition to irrigation has come from groundwater. This is clearly unsustainable resulting in steep depletion of the groundwater table.
  - The problem is compounded by Indian law which extends exclusive rights to landowners over groundwater.
- **Policy Issues:** Groundwater is used to cultivate water-intensive crops like paddy and sugarcane (promoted by Green revolution) in rain deficit states like Punjab and Maharashtra respectively.
  - State procurement policy and subsidized electricity in Punjab make it profitable for farmers to produce rice. Similarly, farmers in Maharashtra cultivate sugarcane because they are assured procurement.
- **Poor Maintenance:** There's a large, growing gap between irrigation potential created and that actually utilised, simply due to lax maintenance.
- **No Reliable Data:** Water data is often unreliable, and is collected using outdated techniques and methodologies.
  - In most segments —industrial usage, households, etc — the data is mostly available at only the aggregate level, implying diminished utility for policymaking.
  - There is no single water database for the country. In 2016, the standing committee on water resources of the Indian parliament finally recommended having a national groundwater database that could be updated every two years. However, not much has been done in this regard.
- **Rapid Urbanization:** India is urbanizing rapidly. This implies heightened water demand from households, industry and agriculture. Concretization also reduces the ground-water replenishment.

- **Poor Water Treatment Plants:** There is gross under-investment in water treatment and reuse.
  - Barely 2% of our urban areas have both sewerage systems and sewage treatment plants.
  - India's urban centers produce over 40,000 million litres of sewage daily, but only about a fifth of the muck undergoes treatment.

## Steps Taken by The Government

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- **MGNREGA for water conservation:**
  - Mahatma Gandhi National Rural Employment Guarantee Act is one of the biggest government-funded employment schemes in the world.
  - The huge workforce employed under the MGNREGA has enabled the government to introduce water conservation as a project under the Act.
  - The government aims to improve groundwater harvesting and build water conservation and storage mechanisms through MGNREGA.
- **Jal Kranti Abhiyan:**

The government is making active efforts to revolutionise villages and cities through block-level water conservation schemes. For example; the Jal Gram Scheme under the Jal Kranti Abhiyan is aimed at developing two model villages in water-starved areas to lead the other villages towards water conservation and preservation.
- **National Water Mission:**
  - The Government of India has launched the National Water Mission with the objective of conservation of water, minimizing wastage and ensuring more equitable distribution both across and within states through integrated water resources development and management.
  - One of the objectives of the Mission is to increase the water use efficiency by 20%.
- **National Rural Drinking Water Programme:**

It seeks to provide every rural person with adequate safe water for drinking, cooking and other basic domestic needs on a sustainable basis.
- **NITI Aayog Composite Water Management Index:**
  - With the objective of achieving effective utilization of water, NITI Aayog has developed the Composite Water Management Index.
  - The index revolves around issues ranging from water scarcity and related morass like deaths due to lack of access to safe water, its projected increase in demand over the years and finding ways for its effective conservation.
- **Jal Shakti Ministry and Jal Jeevan Mission:**

The efforts like the formation of Jal Shakti Ministry (to tackle water issues holistically) and the goal to provide piped water to all rural households by 2024, under the Jal Jeevan mission, are steps in the right direction.

## Way Forward

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- People tend to neglect the importance of water conservation because in most places it is free of cost or charged nominally.
  - Rational pricing of water can be put to practice, keeping in mind the affordability of the population in the country.
  - Along with this, reuse, reduce and recycling of water should be promoted.
- River rejuvenation ought to be a policy priority of the Centre and state governments.
- Sustainable operations and maintenance of irrigation systems must be boosted.
- There is a need to leverage Information Technology to revamp water-related data systems, which seem to be sorely lacking in coverage, efficiency or robustness.
- There is a need to follow conservation agriculture i.e. farming practices adapted to the requirements of crops and local conditions. Cultivation of less water-intensive crops like pulses, millets and oilseeds should be encouraged in water-stressed regions.
- Decentralised approach, with a key focus on water conservation, source sustainability, storage and reuse wherever possible. A participatory approach is needed in water governance.
- Rainwater harvesting should be incorporated into urban planning.
- Need to emphasis on behavioural change, differentiating of potable and non-potable water usage by the citizenry will go a long way in bringing a Jan Andolan

### Drishti Mains Question

What do you understand by 'water stress'? How is India affected by it?