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Water Governance

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India's water crisis: A permanent problem which needs permanent solutions

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.

Elements of Water Governance

Governance is what a government does, to steer, relates to decisions that define expectations, grant power, or verify performance.

It is expected to reflect the system: Democracy in India.

- **Constitutional provisions:** At Centre and State level
- **Legal Framework:** At Centre and State, pre and post colonial
- **Institutional Mechanism:** Key institutions and their functioning, history; capacity to learn, innovate, develop themselves and the sector
- **Planning and decision making processes**
- **Democratic elements in the process including transparency, accountability, decisive participation of the people on ground**
- **How institutes of democracy deal with the sector (parliament, bureaucracy, judiciary, media, civil society, academia)**

Maharashtra is facing a water emergency of unprecedented proportions. Following years of drought, the rivers' currents have ebbed, water in dams and reservoirs has depleted and **over-exploitation of groundwater** has raised concerns over the long-term availability of water.

Meanwhile, media reports claim that IT companies in **Chennai** are asking employees to work from home. **The reason being they don't have water to sustain operations.**

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It has not rained for almost 200 days in the city and Chennai may not get sufficient rain to tide over the water crisis for the next three months.

In North India, residents in the arid Thar Desert of Rajasthan are dishing out Rs 2,500 to buy 2,500 litres of water which they share with their cattle. With the threat of desertification staring **Punjab** in the face and the state struggling to break away from the 'wheat-paddy' cycle, farmers in the state are quickly adopting a five-decade-old scheme to use **'Underground Pipeline System'** for irrigation.

The **Union Government** on its part has created a **Jal Shakti Ministry** under a full-fledged cabinet minister to try and address the water emergency, **but a lot more needs to be done.**

Availability of Water in India

- India receives an average rainfall of about 1170 mm which corresponds to an **annual precipitation of about 4000 BCM**(Billion Cubic Metre) including snowfall.
- However, there is considerable **variation in rainfall both temporally and spatially.**
    - Nearly 75% of this i.e., 3000 BCM occurs during the monsoon season confined to 3 to 4 months (June to September) in a year.
    - On the one side, there are surplus states like Uttar Pradesh, Himachal Pradesh and on the other side, there are water scarce states like Maharashtra, Karnataka, Tamil Nadu, Rajasthan and parts of Gujarat.
    - Also, some states that are called as water abundant states like Punjab, Haryana have their own problems.
- After accounting for evaporation, the average **annual water availability** in the country has been assessed as **1869 BCM**.
- It has been estimated that owing to topographic, hydrological and other constraints, the **utilizable water is 1123 BCM**which comprises of **690 BCM of surface water** and **433 BCM** of replenishable **ground water** resources.

Table 1: Countries with the largest agricultural water withdrawals

Country	Agricultural Water Withdrawals (billion m^3)	Total Water Withdrawals (billion m^3)	Share of Agricultural Water Withdrawal in Total Water Withdrawal (%)	Area Equipped For Irrigation (m ha)
India	688	761	90	67
China	358	554	65	69
United States	175	486	40	26
Pakistan	172	184	94	20
Indonesia	93	113	82	7

Source: World Bank (2018)

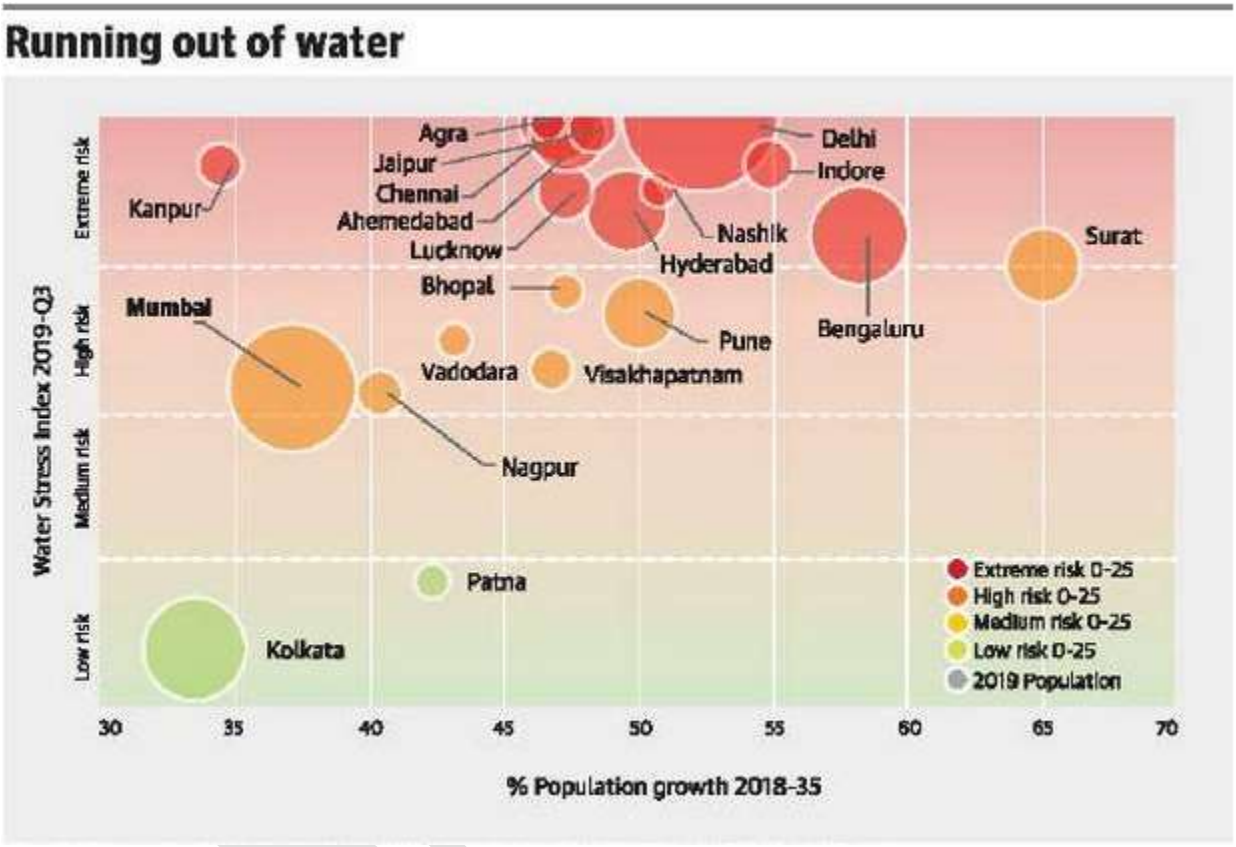
The Difficulty of Water Management

- **Less pre-monsoon rainfall and delay in monsoon** combined with **unprecedented heat** make it **difficult to control the supply** of water in the country.
- **The stress on water will increase with rise in population**, in that case, **managing the demand** for water, will become **difficult**.

Is India facing a Water Emergency?

- India is now facing a **water stressed situation.** Globally, the **standard** for water-stress situation is **1700 cubic metres of availability of water per person. India, at present, is just below that.**
- India is **not** yet **facing** that situation which is globally called as **water-scarcity situation.**

- At the time of independence, the availability of water in the country was around 5,000 cubic metre per capita per annum, higher than what was required then. Over the time, **India has failed to develop that extra availability.**



- **Currently, water resources in India are shrinking.**
  - **The groundwater in most of the parts of northwestern India is now available at 100 metres below the ground.** With the present rate of extraction, in future, the groundwater will be available at 200 or 300 meres below the ground.
  - Level of water in the reservoirs is going down. At present, the 91 reservoirs that Central Water Commission (CWC) monitors, are around 19% of their life storage.
- Recently, in some states, **area under water intensive crops like rice and sugarcane has increased.** This is **linked with the procurement and pricing policy of the government.** It

so happens that owing to the higher production of such crops, the government offers several benefits; this tempts other farmers as well to grow such crops, thus creating **a vicious circle.**

- The participation of individuals, NGOs and different communities in the water management process is quite missing.
    - **The role of the Jal Shakti Ministry is quite limited** in handling the water crisis situation in the country **until the participation of people is there** for using the water prudently, for switching from the crops which are water intensive to the crops that are less water intensive.
- Due to climate change, India in the near future will witness an increase in hot spells, change in rain patterns, thus, the problem of frequent floods and frequent droughts.
- **The Groundwater (Sustainable Management) Bill, 2017** drafted by the Ministry of Water Resources, River Development & Ganga Rejuvenation that provides new bases for regulating groundwater as a public resource and measures at aquifer level, **has been forgotten.**

Steps Taken by the Government

- **'Samagra Shiksha-Jal Suraksha'**

The Department of School Education & Literacy, MHRD has launched the 'Samagra Shiksha-Jal Suraksha' drive to promote water conservation activities for School Students.

Five Major Objectives:

To educate Students learn about conservation of water

To sensitize Students about the impact of scarcity of water

To empower Students to learn to protect the natural sources of water

To help every Student to save at least one litre of water per day

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To encourage Students towards judicious use and minimum wastage of water at home and school level

Target

One Student	–	One Day	–	To Save One Litre of Water
One Student	–	One Year	–	To Save 365 Litres of Water
One Student	–	10 Years	–	To Save 3650 Litres of Water

- Across the country, states are taking the lead.
    - In **Rajasthan**, there is a scheme called **'Mukhya Mantri Jal Swavlamban Abhiyan'**. One of its objectives is to ensure effective implementation of water conservation and water harvesting related activities in rural areas.
    - **Maharashtra** has launched a project called **'Jalyukt-Shivar'**, which aims to make 5000 villages free of water scarcity every year.
    - The **Telangana** government has launched a mission called **Mission Kakatiya**, the objective of which is to enhance the development of agriculture based income for small and marginal farmers, by accelerating the development of minor irrigation infrastructure, strengthening community based irrigation management and adopting a comprehensive programme for restoration of tanks.
- Concerned about the water crisis in rural areas, the Prime Minister of India has recently written a personal letter to 'gram pradhans' (village chiefs) requesting them to conserve rainwater during the forthcoming monsoon.
- The Prime Minister has recently also said that the **government will ensure piped drinking water to every household in the next five years.** It seems to be one of the most ambitious projects that are taken in the last few decades.

Interlinking the Rivers

- The Interlinking River Project is a long term project. If one considers, the Ken-Betwa Linking project, the MoU was signed 20 years back and the groundwork on the project has not started yet.
- There always remains **a lot of political opposition** to the 'Interlinking the Rivers' project.
- It is so that the northern states face the situation of flood at the time of monsoon and water is required by the southern states in the dry months. Whether the project will be able to solve this problem or not is a matter of concern.
- Interlinking the rivers has its own **ecological disadvantages,** like in the case of the Ken-Betwa project, half of the Panna Tiger Reserve will get submerged. Also, there will be huge displacement of people. The cost involved is quite high, this raises the questions over its usefulness.
- **Localised water conservation efforts, instead, is a solution.** 20-25% of the water bodies, that can easily supply water to the local population, have damaged in the last 50 years. With the help of local communities, water bodies in a particular region can be easily managed.

Suggestions

- The time has come when **India needs as rigorous a program on water efficiency as it has on energy efficiency.** Just the way, India has a star-setting system for energy using appliances, it needs to have the same sort of setting for water using appliances.
- **Managing the demand side of water management is crucial** as India cannot increase the per capita availability of water.
- At present, the geography of water is quite different from the political geography of the country. India needs mechanisms which bring relevant people together.
    - **For instance**, ground water, today, is the biggest single source of irrigation. It has even outweighed the surface irrigation. **India has no system of coordination amongst users of the given aquifers,** though it has started mapping its aquifers.

- There are countries where there is a law that states that if a number of people are sharing an aquifer, then such people must have a contract on how much each of them can draw.

- Almost all major rivers in the country are shared between the **states** and perhaps, it is premature to expect that the states will surrender their authority over the river basins in their respective territories. But, at least, they **can come together for coordination over the river basins and sharing the relevant information.** The Central Government can play a major role in bringing the states together.
- The country needs to have a **specific plan for water-stressed states.**
- There will be **more efficient usage of water** especially in the rural areas **if the government starts charging for its water service** on the lines of its electricity supply service. But the Government needs to ensure that it has the **proper infrastructure to supply water** to the houses.
    - In the villages in Marathwada (Maharashtra), Water ATMs have been installed and water is provided at the rate of 25 paise per litre.
    - People living in huts usually buy water from the owners of tankers as they do not have any sort of water connection.
- Both the central government and the state governments need to have **considerations on setting the Minimum Support Price (MSP) of water consuming crops.**
- The government needs to **encourage local participation for conserving water** in the country. Hiware Bazar is a good example.
    - **Hiware Bazar**, a village in Maharashtra's drought-prone Ahmednagar district, was sliding into an abyss after its environmental degradation. But in less than a decade it turned itself around into one of the most prosperous villages of the country. It used funds from government schemes, to regenerate its natural resources--forests, watershed and soil--led by a strong village body. The

village **very well manages the 300-400 millimeters (mm) of rainfall that it receives every year.**

- **Incentive based water conservation** in rural parts in the water stressed areas is another solution, for example, if a particular level of groundwater level is maintained, higher MSP can be provided to the farmers of that region.
- **Water-use efficiency in agriculture** can be ensured by making farmers aware and by providing them, on the ground, technologies like the one related to water resistant crops.
- **In-situ water conservation techniques** like rain water harvesting, check dams need to be continued.
- For the time being, there is a **need to design and develop around water management.** Also, water management needs to be the **central focus of efforts in the agriculture sector and the environment improvement.** Right water management will lead to right land management, health management and education management.

The Government needs to holistically handle the supply as well as the demand side of water management and everybody in the society, i.e. the central government, the state governments (water, being the state subject), citizens, NGOs and companies need to come together to tackle water crisis in the country.