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**DAILY EDITORIAL
ANALYSIS**

TOPIC

**Urban India's Water
Challenges**

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URBAN INDIA'S WATER CHALLENGES

Context

- Recently, it was observed as reduced river flows and falling water tables have made the summer harsher in several parts of the country.

About the Water Crisis in India

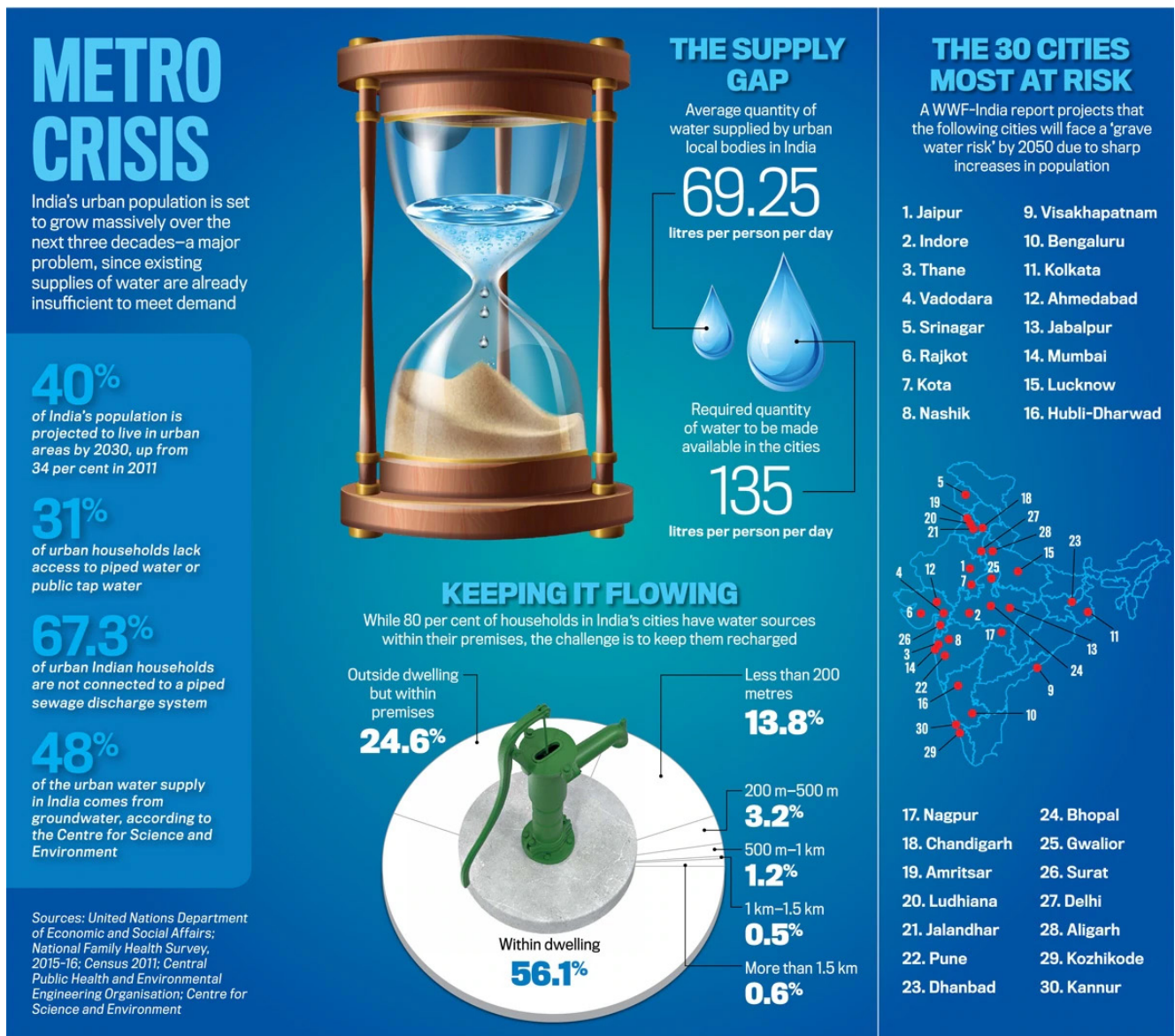
- India's water crisis is a complex issue that stems from multiple factors. Rapid urbanisation, industrialization, and unsustainable agricultural practices contribute to increasing water demand.
- Climate change exacerbates the situation, causing erratic rainfall patterns and affecting water sources.
 - ◆ Inefficient water management, inadequate infrastructure, and pollution also play a role, making water scarcity a pressing concern.

Important Statistics

- About 71% of the Earth's surface is covered with water.
- 96.5% of the total water on earth is in Oceans.
 - ◆ It also exists in the air as vapour, in rivers and lakes, in ice-caps, in glaciers, and in the ground as soil moisture.
- Only 2.5% of the total water on earth is freshwater and of this, only 0.3% is in liquid form on the earth's surface.

Status of Water Crisis in India

- **High Water Stress:** India has about 18% of the world's population but only 4% of the world's water resources (NITI Aayog Report), making it among the most water stressed in the world.
- **Low per capita water availability:** The average per capita water availability for 2031 has been assessed to be 1367 cubic metres. Per capita annual freshwater availability in 2021 was lower than the **Falkenmark Water Stress Indicator** threshold.
- **Groundwater:** It is vital for India's agriculture, industry and population needs. Groundwater is a primary irrigation source, crucial for food security.
 - ◆ Around 30% of India's freshwater is stored as groundwater, mostly in aquifers — bodies of permeable rock and sediment — below the Earth's surface.
 - ◆ With more than 60% of irrigated agriculture and 85% of drinking water supplies dependent on it, groundwater is a vital resource.
 - ◆ In rural areas, groundwater is a primary source of drinking water through community wells and boreholes.
 - ◆ Industries depend on it, particularly where surface water is scarce.
- **Uneven Distribution:** Monsoon rains are crucial, and erratic rainfall patterns worsen water stress in many regions.
- **Strained Access:** Millions lack access to safe drinking water, relying on polluted sources or struggling to afford clean water.
- **Widening gap between water demand and availability:** Rapid urbanisation and industrialisation are taking a heavy toll on the overall water demand scenario.



Root Causes of the Water Crisis

- The water crisis in India is rooted in a **combination of factors**, including overexploitation of groundwater, inadequate rainwater harvesting, and mismanagement of water resources. Pollution of water bodies and inefficient agricultural irrigation methods further exacerbate the issue, leading to reduced water availability and quality. These include:
 - Rising Demand and Overexploitation:** Population growth and rapid urbanisation put immense pressure on water resources. Excessive groundwater extraction for agriculture and industry depletes aquifers faster than they can be replenished.
 - For example, **Bengaluru** has undergone unplanned urbanisation. In 1800, the city had 1,452 interconnected water bodies and about 80% green cover. However, this has drastically changed due to development and growth.
 - Pollution and Poor Infrastructure:** Industrial waste and agricultural runoff contaminate surface water sources, making them unfit for consumption. Leakages in pipes and canals waste precious water, further straining supplies.
 - According to the WHO, **Iron** was found in water supplied to 30% or 19,720 rural Indian households (Lok Sabha 2017). **Arsenic** was found in the drinking water source of 21% of such households.
 - Iron is known to **cause respiratory system haemorrhage** when mixed with drinking water.

- **Climate Change:** Unpredictable weather patterns disrupt monsoons and exacerbate water scarcity.
 - ♦ **Karnataka** experienced an early start to the season with a drought in Bengaluru, while **Delhi** faced a water emergency due to high temperatures.
- **Data Gaps and Emergency Responses:** Data on per capita water availability is unclear, leading to reactive measures during shortages. The government should prioritise water conservation, reuse, and recycling initiatives.
- **Lack of Coordination and Ineffective Plans:** There's minimal coordination between departments handling water resources, and existing water-sharing arrangements fail during shortages. Rainwater harvesting plans are not effectively implemented.

Water and Constitution of India

- In India, the constitutional right to access to clean drinking water can be drawn from the right to food, the right to clean environment and the right to health, all of which have been protected under the broad heading of the '**Right to Life**', guaranteed under **Article 21**.
 - ♦ **Narmada Bachao Andolan v. Union of India (2000):** SC observed that 'Water is the basic need for the survival of human beings and is part of the right to life and human rights as enshrined in **Article 21 of the Constitution of India** and the right to healthy environment and to sustainable development are fundamental human rights implicit in the right to 'life'.
 - ♦ **State of Karnataka v State of Andhra Pradesh (2000):** SC held that 'the right to water is a right to life, and thus a fundamental right'.
- **Article 39 (b)** mandates that 'the State shall, in particular, direct its policy towards securing that the ownership and control of the material resources of the community are so distributed as best to sub serve the common good.'
- **Article 47** suggests the duty of the State to raise the level of nutrition and the standard of living and to improve public health.
- **Article 51 (A) (g)** specifically deals with the fundamental duty with respect to the Environment.
- **Article 262** is related with adjudication of disputes relating to waters of Inter State Rivers or river valleys.

Statutory Provisions

- **Indian Easements Act (1882):** It recognises the **RIGHT OF A RIPARIAN OWNER** (someone who owns the land adjoining a river or water stream) to unpolluted waters.
 - ♦ A riparian owner has a **RIGHT TO USE THE WATER OF THE STREAM** which flows past his land equally with other riparian owners, and to have the water come to him undiminished in flow, quantity and quality and to go beyond his land without obstruction.
- Water (Prevention and Control of Pollution) Act, 1974
- **The Environment (Protection) Act, 1986:** Section 2(a) of the Act defines the environment to include water and the interrelationship which exists among and between water and human beings, other living creatures, plants, microorganisms and property.

Measures to Overcome Water Scarcity in India

- **Jal Shakti Abhiyan (JSA):** It aims to improve water availability, including groundwater conditions in water-stressed blocks across 256 districts.
- **Jal Jeevan Mission (JJM):** It has been working to provide every rural household with potable water through tap connections.
 - ♦ The mission addresses **SDG target 6.1** which focuses on achieving universal and equitable access to safe and affordable drinking water for all by 2030.
- **National Water Mission (NWM):** Established under the National Action Plan on Climate Change, NWM focuses on the conservation and management of water as a national resource.
- **Atal Bhujal Yojna & Mission Amrit Sarovar:** These schemes focus on constructing water bodies and promoting rainwater harvesting.

- **Catchment Scale-Based Approach:** Emphasises linking water reallocation with development and infrastructure investment for integrated water management.
- **Pradhan Mantri Krishi Sinchayee Yojana (PMKSY):** It is a **centrally sponsored scheme (core scheme)** launched in 2015. The centre- state share will be on ratio 75:25 (90:10 for north-eastern region and hilly states)
 - ♦ **Accelerated Irrigation Benefit Programme (AIBP)** that aims to provide Central Loan Assistance (CLA) to major and medium irrigation projects that were in an advanced stage of completion to achieve the targeted potential, ultimately resulting in saving water and improving efficiency.
- **National Aquifer Mapping and Management Programme (NAQUIM):** Under NAQUIM, groundwater aquifers have been mapped and management plans have been made for 80% of the country.
- **Bureau of Water Use Efficiency (BWUE):** It will be a facilitator for the promotion of improving water use efficiency across various sectors namely irrigation, drinking water supply, power generation, industries, etc., in the country.
- **Local Measures:** Activists and experts have been working on bottom-up schemes to revive local water bodies, demonstrating significant change at the community level.

Way Ahead

- The water crisis demands immediate and collective action. By adopting sustainable practices, promoting water conservation, and investing in infrastructure, India can mitigate the crisis and ensure a water-secure future.
- **Need for Long-Term Water Policy:** Government has focused on tap water connections, but aquifer health is overlooked. A comprehensive policy is needed to address water shortages and prevent conflicts.
- **Agricultural Water Management Initiatives:** Programs like Sahi Fasal Campaign and Pradhan Mantri Krishi Sinchayee Yojana promote efficient water use in agriculture, but broader demand-side management is necessary.

Mains Practice Question

[Q] Rapid urbanisation in India has contributed to the water crisis in its major cities. Comment. How do the current urban water management practices in India contribute to water scarcity?

