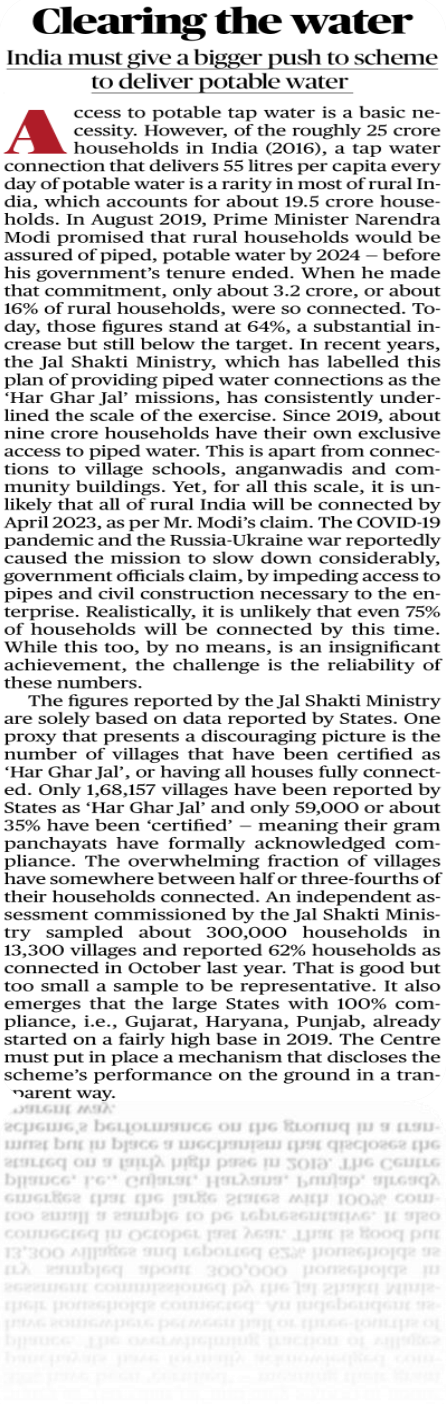
Potable Water & Jal Jeevan Mission

Why in News?

Context: Roughly 25 crore households in India (2016), a tap water connection that delivers 55 litres per capita every day of potable water is a rarity in most of rural India, which accounts for about 19.5 crore households.



Clearing the water

India must give a bigger push to scheme to deliver potable water

Access to potable tap water is a basic necessity. However, of the roughly 25 crore households in India (2016), a tap water connection that delivers 55 litres per capita every day of potable water is a rarity in most of rural India, which accounts for about 19.5 crore households. In August 2019, Prime Minister Narendra Modi promised that rural households would be assured of piped, potable water by 2024 – before his government's tenure ended. When he made that commitment, only about 3.2 crore, or about 16% of rural households, were so connected. Today, those figures stand at 64%, a substantial increase but still below the target. In recent years, the Jal Shakti Ministry, which has labelled this plan of providing piped water connections as the 'Har Ghar Jal' missions, has consistently underlined the scale of the exercise. Since 2019, about nine crore households have their own exclusive access to piped water. This is apart from connections to village schools, anganwadis and community buildings. Yet, for all this scale, it is unlikely that all of rural India will be connected by April 2023, as per Mr. Modi's claim. The COVID-19 pandemic and the Russia-Ukraine war reportedly caused the mission to slow down considerably, government officials claim, by impeding access to pipes and civil construction necessary to the enterprise. Realistically, it is unlikely that even 75% of households will be connected by this time. While this too, by no means, is an insignificant achievement, the challenge is the reliability of these numbers.

The figures reported by the Jal Shakti Ministry are solely based on data reported by States. One proxy that presents a discouraging picture is the number of villages that have been certified as 'Har Ghar Jal', or having all houses fully connected. Only 1,68,157 villages have been reported by States as 'Har Ghar Jal' and only 59,000 or about 35% have been 'certified' – meaning their gram panchayats have formally acknowledged compliance. The overwhelming fraction of villages have somewhere between half or three-fourths of their households connected. An independent assessment commissioned by the Jal Shakti Ministry sampled about 300,000 households in 13,300 villages and reported 62% households as connected in October last year. That is good but too small a sample to be representative. It also emerges that the large States with 100% compliance, i.e., Gujarat, Haryana, Punjab, already started on a fairly high base in 2019. The Centre must put in place a mechanism that discloses the scheme's performance on the ground in a transparent way.

Key Highlights

- In August 2019, Prime Minister Narendra Modi promised that rural households would be assured of piped, potable water by 2024 — before his government's tenure ended. When he made that commitment, only about 3.2 crore, or about 16% of rural households, were so connected.
- Those figures stand at 64%, a substantial increase but still below the target. In recent years, the Jal Shakti Ministry, which has labelled this plan of providing piped water connections as the 'Har Ghar Jal' missions, has consistently underlined the scale of the exercise.
- Since 2019, about nine crore households have their own exclusive access to piped water. This is apart from connections to village schools, anganwadis and community buildings.
- It is unlikely that all of rural India will be connected by April 2023, as per Prime Minister's claim. The COVID-19 pandemic and the Russia-Ukraine war reportedly caused the mission to slow down considerably, government officials claim, by impeding access to pipes and civil construction necessary to the enterprise.
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Har Ghar Jal Mission/Jal Jeevan Mission

The mission strives to ensure that every rural community has access to an adequate quantity of safe drinking water on a regular and long-term basis, all while keeping the service charges affordable.

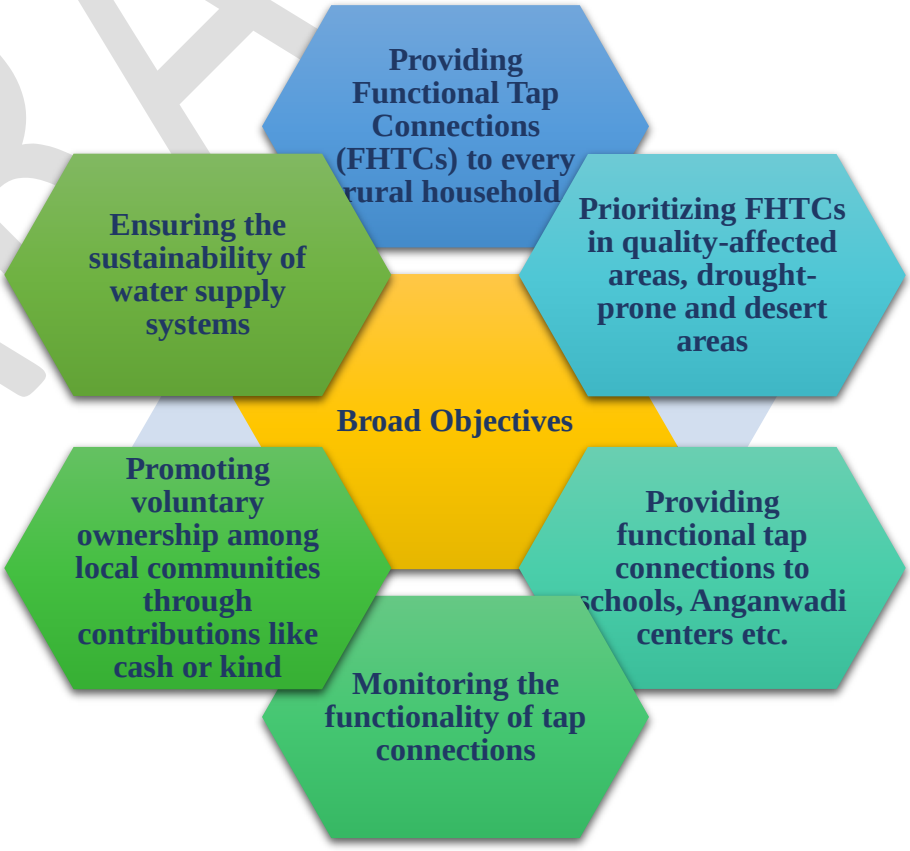
Vision

The vision of the Jal Jeevan Mission is to improve the living standards of rural communities by ensuring that every rural household has access to an adequate quantity of safe drinking water of prescribed quality. This water supply should be available regularly and on a long-term basis, with affordable service delivery charges.

Objectives

The Jal Jeevan Mission has the following objectives:

- **Planning:** Assist and empower states/union territories (UTs) in developing a participatory rural water supply strategy. This strategy aims to ensure the long-term provision of potable drinking water to every rural household and public institution, including government buildings, schools, health centers, and more.
- **Infrastructure Creation:** Support states/UTs in creating water supply



infrastructure to ensure that every rural household has a Functional Tap Connection (FHTC) by the year 2024. The infrastructure should provide water in the required quantity and quality on a regular basis.

- **Drinking Water Security:** Help states/UTs in planning for their drinking water security, considering the specific needs and challenges of each region.
- **Community Ownership:** Encourage Gram Panchayats (GPs) and rural communities to plan, implement, manage, own, operate, and maintain their in-village water supply systems.
- **Institutional Development:** Assist states/UTs in developing robust institutions that focus on service delivery and financial sustainability in the water sector. This includes promoting a utility approach.
- **Capacity Building and Awareness:** Conduct capacity building programs for stakeholders and create awareness in communities about the significance of water for improving the quality of life.
- **Financial Assistance:** Provide provisions and mobilize financial assistance to states/UTs for the effective implementation of the mission.

Components of the Jal Jeevan Mission

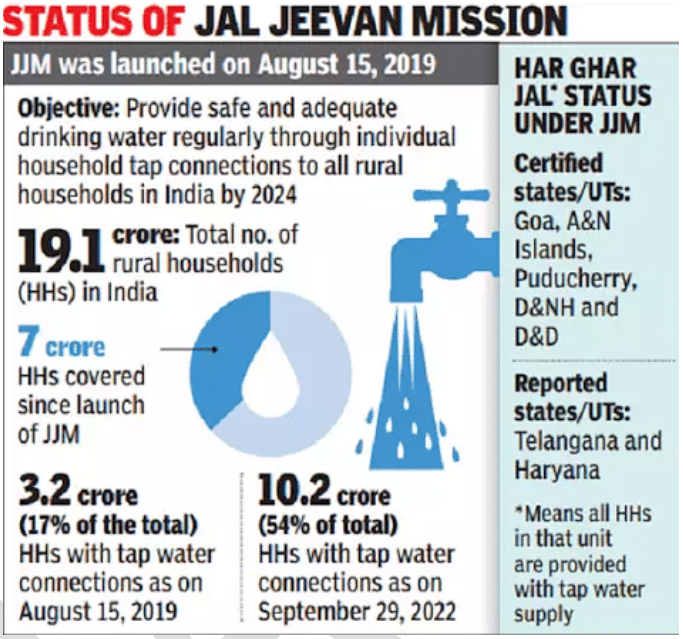
The following components are supported under the Jal Jeevan Mission:

- Development of in-village piped water supply infrastructure to provide tap water connections to every rural household.
- Development of reliable drinking water sources or augmentation of existing sources to ensure long-term sustainability of the water supply system.
- Establishment of bulk water transfer systems, treatment plants, and distribution networks to cater to every rural household where necessary.
- Technological interventions to address water quality issues and remove contaminants.
- Retrofitting of completed and ongoing schemes to provide Functional Tap Connections (FHTCs) with a minimum service level of 55 liters per capita per day (lpcd).
- Implementation of grey water management systems to efficiently handle wastewater.
- Support activities including Information, Education, and Communication (IEC) programs, Human Resource Development (HRD), training initiatives, development of utilities, water quality laboratories, water quality testing and surveillance, research and development (R&D), the establishment of knowledge centers, capacity building of communities, and other relevant measures.
- Addressing any unforeseen challenges or issues arising from natural disasters or calamities that may affect the goal of providing Functional Tap Connections (FHTCs) to every household by 2024, as per the guidelines of the Ministry of Finance on Flexi Funds.

Status of Jal Jeewan Mission

- ✓ At the time of the JJM announcement, only 3.23 Crore households (17%) had tap water connections.
- ✓ However, significant strides have been made since then, with approximately 7.43 Crore rural households being provided tap water connections under the mission.
- ✓ As of December 5, 2022, out of the total 19.36 Crore rural households in the country, around 10.66 Crore households (55%) now have access to tap water supply in their homes.

- ✓ States like Maharashtra, Gujarat, and Tamil Nadu have made considerable progress in providing tap water connections and supply. On the other hand, states like Arunachal Pradesh, Meghalaya, and Nagaland are facing challenges in accelerating the implementation process. It is essential to address the specific obstacles in each state to ensure equitable access to tap water supply.
- ✓ Some states have witnessed substantial growth in tap water supply, while others show varying levels of progress. It is crucial to consider the different factors that influence the pace of implementation, such as geographical challenges, infrastructure development, and financial resources.



Geographical Challenges

- States with diverse topographies and geographical features may face challenges in implementing tap water supply projects. For instance, hilly regions like Himachal Pradesh or mountainous areas in Arunachal Pradesh may require more complex infrastructure and techniques for water supply, leading to slower progress compared to states with flatter terrains.

Infrastructure Development

- The existing infrastructure, including water sources, pipelines, and storage facilities, plays a crucial role in the implementation of tap water supply projects. States with well-developed infrastructure, such as Gujarat and Maharashtra, may have an advantage in accelerating the progress due to the availability of pre-existing systems that can be upgraded or expanded.

Financial Resources

- Adequate funding is essential for the successful implementation of tap water supply projects. States that have allocated sufficient financial resources and secured funding from central government schemes or external sources can make faster progress. For instance, Andhra Pradesh and Tamil Nadu have made substantial strides in tap water supply, partly due to their effective financial planning and resource allocation.

Government Prioritization

- The commitment and prioritization of the state government towards tap water supply initiatives can greatly impact the progress. States like Telangana and Odisha, which have given significant attention to the Jal Jeevan Mission and made it a priority, have witnessed notable advancements in tap water supply.

Village Water & Sanitation Committee (VWSC) Formation and Village Action Plans (VAPs)

- ✓ More than 5.17 lakh Village Water and Sanitation Committees (VWSCs)/ Paani Samitis have been formed.
- ✓ VWSCs/Paani Samitis are responsible for managing and maintaining the in-village water supply systems, including local water sources.
- ✓ A total of 5.08 lakh Village Action Plans have been created, outlining the specific water supply scheme needed, cost estimates, implementation schedule, operation and maintenance arrangements, and household contributions towards partial capital costs.

National WASH Expert

- ✓ The National Centre for Drinking Water, Sanitation, and Quality is responsible for empaneling and deploying National WASH Experts (NWEs) to provide ground truthing and technical assistance to states in implementing the Jal Jeevan Mission.
- ✓ Currently, 46 NWEs have been empaneled.
- ✓ During the year, 62 teams visited approximately 1,035 villages to assess the implementation work under the JJM.
- ✓ Based on the implementation status, NWEs provide star ratings to villages and offer feedback to states in three categories: Satisfactory, Satisfactory but improvement needed, and Unsatisfactory, immediate action needed.
- ✓ After each visit, NWEs provide feedback to the respective state authorities.

Implementation Support Agencies (ISAs)

- ✓ States and Union Territories (UTs) are supporting Panchayats by engaging Implementation Support Agencies (ISAs).
- ✓ ISAs assist in the formation of Village Water and Sanitation Committees (VWSCs) through participatory rural appraisal, support in creating Village Action Plans, and carry out activities after infrastructure construction.
- ✓ Around 14,000 ISAs have been engaged and are actively involved in fieldwork.

Capacity Building through Key Resource Centers

- ✓ To enhance capacity and provide guidance to various stakeholders, 100 reputable governmental and non-governmental academic institutions, agencies, firms, organizations, think tanks, and training institutions are involved as Key Resource Centers (KRCs).
- ✓ Through these KRCs, 104 training programs have been conducted during the fiscal year 2022-23, training approximately 4,000 individuals on different aspects of drinking water under the Jal Jeevan Mission (JJM).

Status of Water Quality Monitoring and Surveillance

Importance of Monitoring Water Quality

- Under the Jal Jeevan Mission, ensuring the quality of water is a primary objective.
- To achieve this, the program emphasizes regular testing of water samples at both the source and delivery points.
- This comprehensive approach aims to guarantee that the supplied water meets the necessary quality standards.

Availability of Water Testing Laboratories

- Across the country, there are a total of 2,074 water testing laboratories. Of these, 1,005 laboratories have received accreditation from the National Accreditation Board for Testing and Calibration Laboratories (NABL).
- This accreditation ensures the laboratories meet the required standards for conducting accurate water quality testing. Moreover, the water testing labs operated by the states and union territories are now open to the public, allowing individuals to have their water samples tested at affordable rates.

Extensive Testing Efforts

- In the fiscal year 2022-23, up to the present date, more than 27 lakh water samples have been tested in various laboratories. This rigorous testing process enables authorities to gain a comprehensive understanding of the overall water quality situation across the country.

Reduction of water borne diseases

- As per the report from National Centre for Disease Control (NCDC), with the availability of safe and potable drinking water at the doorstep of every rural household, the water-borne disease has been drastically reduced.
- The details of reduction in water borne diseases in previous three years is tabulated herewith.

Year	Water-borne diseases
2019	177 Lakhs
2020	89 Lakhs
2021	59 Lakhs

Source: National Centre for Disease Control (NCDC)

Empowering Women through Field Test Kits (FTKs)

- To foster women's participation in water quality monitoring, a minimum of five women in each village are being trained to utilize Field Test Kits (FTKs) for testing water quality at the local level. So far, over 16.21 lakh women have received training in 1.95 lakh villages.
- In the current fiscal year, more than 57.99 lakh water samples have been tested using FTKs. This approach not only promotes inclusivity but also enhances the reach and effectiveness of water quality monitoring efforts.

Funds Allocation for Jal Jeevan Mission

Estimated Outlay and Allocation of Funds

- The Jal Jeevan Mission, as part of the 'Har Ghar Jal' program, has an estimated outlay of Rs. 3.6 lakh crore for a five-year period from 2019 to 2024.
- Recognizing the significance of water supply and sanitation, the 15th Finance Commission has identified it as a national priority.
- Consequently, funds of Rs. 2.36 lakh crore have been allocated to Rural Local Bodies/Panchayat Raj Institutions (RLBs/PRIs) for the period from 2021-22 to 2025-26.

Utilization of Funds

- Of the allocated funds, 60% amounting to Rs. 1.42 lakh crore has been provided as Tied Grants exclusively for drinking water, rainwater harvesting, sanitation, and the maintenance of open-defecation free (ODF) villages.
- This substantial investment in rural areas throughout the country serves to accelerate economic activities, boost the rural economy, and create employment opportunities in villages.
- This proactive approach aims to ensure that villages have access to safe drinking water along with improved sanitation facilities, ultimately transforming them into 'WASH enlightened' villages.

Release of Funds in 2022-23

- In the financial year 2022-23, the Government of India has thus far released Rs. 22,975.34 crore to 21 eligible states for the implementation of the Jal Jeevan Mission. These funds are disbursed based on the utilization of available central funds and the matching state share, following a transparent process.

Monitoring and Financial Management

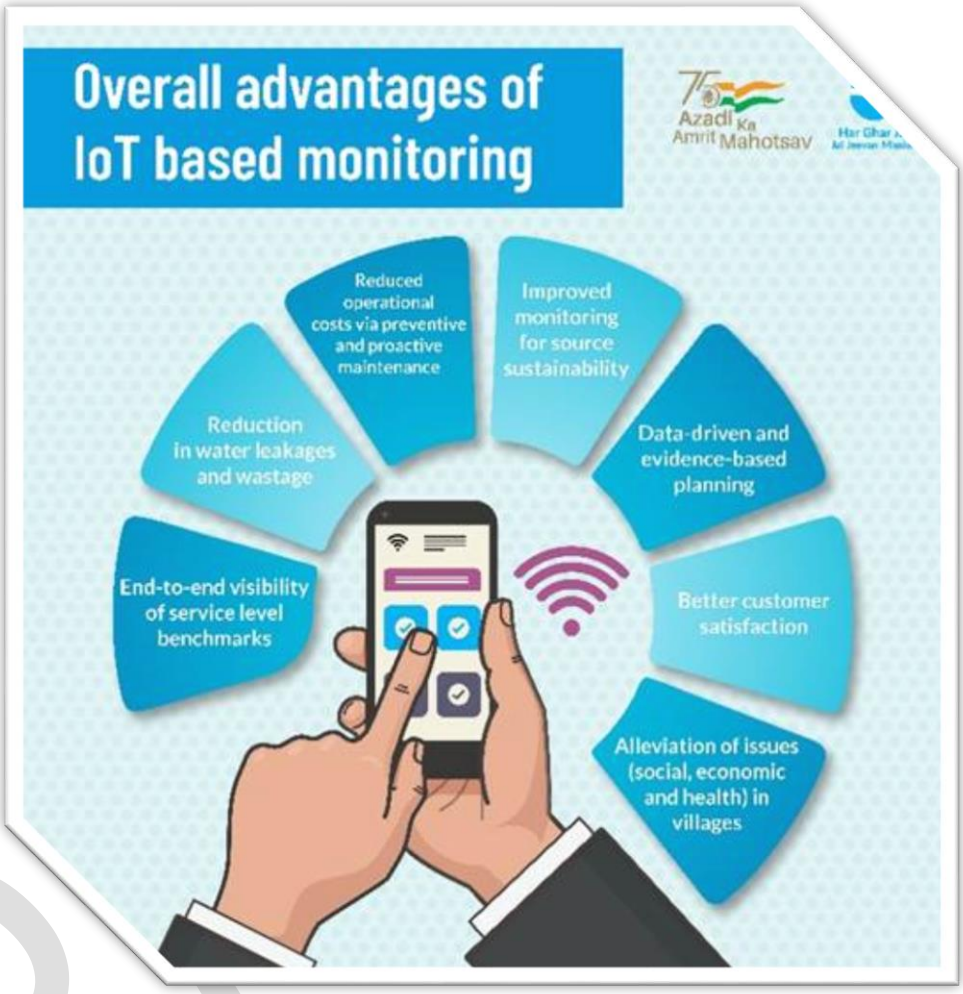
- To ensure effective monitoring and transparent financial management, the Integrated Management Information System (IMIS) and JJM-Dashboard have been implemented for online monitoring purposes. Additionally, the Public Financial Management System (PFMS) facilitates transparent online financial management.

Technologies for Drinking Water Supply and Water Quality

Jal Jeevan Mission recognizes the importance of leveraging various technologies to enhance the community-led implementation of initiatives related to drinking water supply and water quality. The mission employs the following technologies:

- ✓ **Source Sustainability Measures:** Technologies such as aquifer recharge, rainwater harvesting, increased storage capacity of water bodies, reservoirs, and de-silting are utilized to improve the lifespan of water supply systems.
- ✓ **Water Budgeting and Audits:** Water budgeting and audits help in effective water management by monitoring and optimizing water usage.
- ✓ **Operation and Maintenance:** Technological solutions aid in the operation and maintenance of water supply systems, ensuring their smooth functioning.
- ✓ **Grey Water Management:** Techniques are employed to manage greywater, which includes wastewater from sources other than toilets. This helps in efficient water reuse and conservation.
- ✓ **Water Quality Monitoring and Surveillance:** Technologies are utilized for monitoring and assessing water quality to ensure that the supplied water meets the required standards.
- ✓ **Pre-positioned Emergency Water Supply Kits:** Kits equipped with necessary water supply resources are strategically positioned to provide transitional services during emergencies or in temporary camps.

- ✓ **Solar-based Water Supply Schemes:** Solar energy is harnessed to power water supply systems, reducing carbon footprints and promoting sustainable energy practices.
- ✓ IoT, Remote Sensing, GIS, and Design Software: Technologies like the Internet of Things (IoT), remote sensing, geographic information systems (GIS), and design software are utilized for tasks such as water accounting, water quality control, water use efficiency, water resource planning, and impact assessment. IoT pilots are being implemented in 118 villages across 14 states and union territories.



- ✓ **Innovative Projects:** The Technical Committee recommends 25 innovative projects related to water treatment, water quality monitoring, IoT-based battery vehicles, and software for hydraulic design in rural India.

Non-Revenue Water and Address Grievances

In addition to technology deployment, efforts are made to reduce non-revenue water and address grievances related to water supply through the following means:

- **Water Audits and Water Security Planning:** Community-led water audits and water security planning help identify and mitigate losses in the water supply distribution system and non-revenue water. This includes the use of IoT-based technology, water metering, installation of flow control valves, water budgeting, community surveillance, and water conservation measures.
- **Grievance Redressal Mechanism**: A Grievance Redressal Cell is established to address water supply-related grievances. Citizens can lodge complaints through the Centralized Public Grievances Redress

and Monitoring System (CPGRAMS). Feedback and suggestions from recipients and stakeholders are actively sought to improve service delivery and enhance the responsiveness of the Department.

By leveraging technology and implementing effective management strategies, the Jal Jeevan Mission aims to ensure reliable and quality drinking water supply while addressing challenges related to water conservation, sustainability, and customer satisfaction.

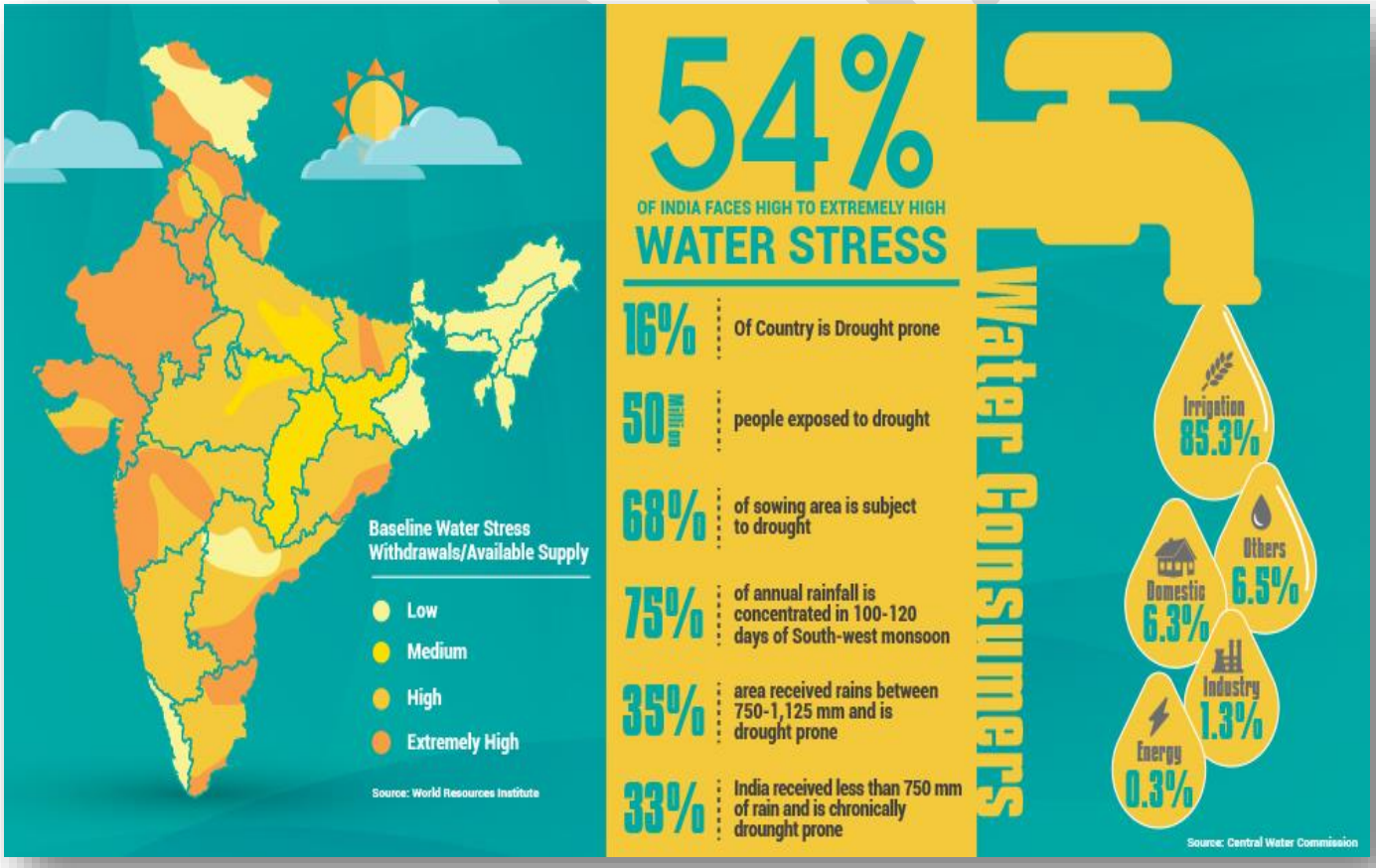
What Is The Present Status Of Potable Water?

As per the Government's Management Information System for the Jal Jeevan Mission, between August 2019 and May 2022, as a result of the programme, coverage of functional household tap connections in rural areas has increased from 17 percent to over 49 percent. Tap water has also been provided to almost all schools and pre-schools in the country.

Situation of Water and Sanitation in India

A few numbers from the World Bank highlight the plight the country is facing:

- 163 Million Indians lack access to safe drinking water
- 210 Million Indians lack access to improved sanitation
- 21% of communicable diseases are linked to unsafe water



- 500 children under the age of five die from diarrhea each day in India
- More than half of the rivers in India are highly polluted with numerous others at levels considered unsafe by modern standards. The waters of the Yamuna, Ganga and Sabarmati flow the dirtiest with a deadly mix of pollutants both hazardous and organic.
- It is estimated that waterborne diseases have an economic burden of approximately USD 600 million a year in India. This is especially true for drought- and flood-prone areas, which affected a third of India's population in the past couple of years.
- Moreover, two-thirds of India's 718 districts are affected by extreme water depletion. One of the challenges is the fast rate of groundwater depletion in India, which is known as the world's highest user of this source due to the proliferation of drilling over the past few decades. Groundwater from over 30 million access points supplies 85 per cent of drinking water in rural areas and 48 per cent of water requirements in urban areas.
- In 2015, India achieved 93 per cent coverage of access to improved water supply in rural areas. However, with the shift from the Millennium Development Goals (MDGs) to the Sustainable Development Goals (SDGs) the new baseline estimates that less than 49 per cent of the rural population is using safely managed drinking water (improved water supply located on-premises, available when needed and free of contamination).
- NITI Aayog estimates that 21 major cities, including Delhi, would run out of groundwater by 2030.
- India draws nearly 25% of the world's groundwater – that's more groundwater than China and the USA combined.
- India receives an annual rainfall of 4000 billion cubic metres (bcm), but only 1869 bcm remains after accounting for evaporation. This means that the actual availability of water is reduced to 1137 bcm.
- However, even within this reduced amount, there are significant temporal and regional variations in water availability across the country.
- While states like Uttar Pradesh and Himachal Pradesh experience water surplus, others like Maharashtra (Vidarbha, Beed), Karnataka, Tamil Nadu, Rajasthan, and parts of Gujarat face water scarcity. Additionally, states known for their water abundance, such as Punjab and Haryana, also encounter their own water-related challenges.

Recent Water Crisis in India

Maharashtra's Unprecedented Water Crisis

- Years of drought have led to a severe water crisis in Maharashtra.
- River currents have diminished, and dams and reservoirs have depleted.
- Over-exploitation of groundwater raises concerns about long-term water availability.

Chennai's Water Shortage Impacting IT Firms

- Chennai's IT firms are enforcing work-from-home policies due to a lack of water.
- The city has not received significant rainfall for almost 200 days.
- Adequate rain is not expected for the next three months, exacerbating the water crisis.

Rajasthan's Thar Desert: Paying for Water

- In the arid Thar Desert of Rajasthan, residents are purchasing 2500 litres of water for Rs. 2500.
- This water is shared not only for personal use but also for their livestock.

Punjab's Struggle with Desertification and Agricultural Shift

- Punjab faces the threat of desertification and is working to break away from the wheat-paddy cycle.
- Farmers have adopted an underground pipeline system for irrigation.
- This scheme, implemented for a decade, helps address water scarcity issues in the state.

Central Government's Response and the Jal Shakti Ministry

- The Central government has established a dedicated Jal Shakti Ministry led by a full-fledged cabinet minister to tackle the water crisis.
- The ministry aims to address the challenges of water scarcity and management.
- Despite these efforts, more comprehensive actions are necessary to effectively resolve the water crisis in India.

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