

How India Aims To Use Every Drop Of Water

Govt Working On
Plans To Address
Falling Per Capita
Availability To
Ward Off Any Crisis

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With only 2% of Earth's landmass and 4% of fresh water resources India supports 18% of the human population and 15% of the livestock. Although not a 'water scarce' nation yet, it is in a 'water-stressed' situation with annual per capita water availability below 1,700 cubic metres. Melting of Himalayan glaciers and erratic monsoon rainfall due to climate change could further increase this stress.

To compound the crisis, indiscriminate use of groundwater, pollution of surface water and mismanagement of wastewater are common problems in India. The gap between wastewater generation and treatment capacity is also worrisome. India treats just a third of the 72,368 million litres of sewage generated in its urban areas every day. Untreated water not only goes waste but also pollutes groundwater, rivers and other water bodies. Therefore, judicious use of water in agriculture - which consumes nearly 89% of freshwater - and efforts to reuse wastewater are key to improving the situation.

In a business-as-usual scenario, the country won't be able to meet its future requirement without increasing water availability. While groundwater availability improved between 2017 and 2020, nearly a fifth of the assessed blocks in the country were still in a precarious condition due to over-exploitation. These blocks are concentrated in Punjab, Haryana, Delhi, west UP, Rajasthan, Gujarat, and parts of Karnataka, Andhra Pradesh, Telangana and Tamil Nadu.

The Central Ground Water Board (CGWB) says while over-exploitation of groundwater is the main problem in

WELLS RUNNING DRY ACROSS THIRD OF COUNTRY

Parts of India are already water-stressed. To improve matters, a key solution would be to augment our wastewater treatment capacity

Several Parts Of India Are Staring At A Crisis

- Over-exploited units are those where groundwater extraction substantially exceeds (more than 100%) the annually replenishable groundwater recharge.

► If it's between 90-100%, it comes under the 'critical' category. Those between 70-90% are categorised as 'semi-critical'. Units where extraction is less than 70% of the annually replenishable groundwater recharge are categorised as 'safe'.

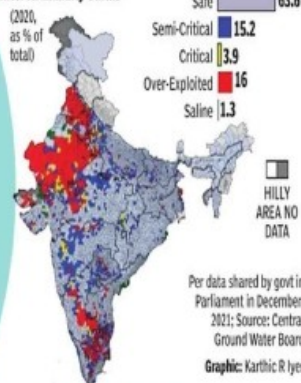
**Units:
block/
luk/tehsil/
andal/firka

Water Availability	2017 (6,881 assessment units**)		2020 (6,965 assessment units**)	
Category	No. Of Units	As % Total	No. Of Units	As % Total
Safe	4,310	62.6	4,427	63.6
Semi-Critical	972	14.1	1,057	15.2
Critical	313	4.6	270	3.9
Over-Exploited	1,196	17.2	1,114	16
Saline	100	1.5	97	1.3

*Projected; 1 cubic meter = 1,000 litres; Annual per capita water availability of less than 1,700 cubic meters is considered as a 'water-stressed' condition; Below 1,000 cubic meters is considered as a 'water scarcity' condition

In Punjab, 78% Of Sources Over-Exploited

Water Availability Status



Per data shared by govt in Parliament in December, 2021; Source: Central Ground Water Board

Graphic: Karthik R Iyer

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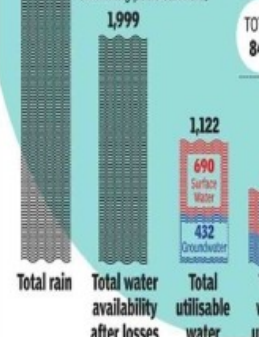
3,880 BCM In 30 Years, India's Water Usage Will Be Up By 70%

(As of 2017; all figures in billion cubic metres; 1 bcm is as much water as 400,000 Olympic-sized swimming pools can hold)

Water requirements for different uses

Projections, BCM

	2025		2050
	611	Irrigation	807
	62	Domestic	111
TOTAL	67	Industries	81
843	33	Power	70
	70	Others	111



The National Commission on Integrated Water Resources Development says India won't be able to meet its future need unless it increases quantum of total utilisable water

Wastewater Treatment Levels Need To Go Up

Sewage generation (urban): **72,368 MLD**
 Installed treatment capacity: **31,841 ML**
 Operational treatment capacity: **26,869 ML**
 No. of sewage treatment plants (STPs): **1,465**

Major states, treatment capacity as % of sewage

State	Treatment Capacity as % of Sewage
Maharashtra	75.7
Gujarat	67.4
Karnataka	66.8
MP	50.4
UP	40.8
Rajasthan	34.1
Andhra Pradesh	28.9
Tamil Nadu	23.2
West Bengal	16.4
Kerala	12.8

MLD: million litres per day

the northwestern region, the arid climate is to blame in Rajasthan and Gujarat. In the south, crystalline aquifers reduce the availability of groundwater.

As rainfall varies across regions, different conservation and groundwater recharge approaches may be needed across the country. But as water is a state subject, water management strategies are confined to the administrative boundaries of states. **The absence of a uni-**

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fied approach that regards an entire river basin as a hydrological unit makes the problem tricky. And there is a multiplicity of authorities managing the country's wa-

ter resources.

To address the challenges in the water sector, the ministry of 'Jal Shakti' (water resources) has started the process to make a new National Water Policy aimed at addressing the existing situation and suggesting a framework for creating a system or institution that may coordinate planning, management and use of water resources with a unified national perspective. A draft committee has already

submitted its report on this to the ministry.

The government has also proposed to set up a National Bureau of Water Use Efficiency (NBWUE) – like the Bureau of Energy Efficiency (BEE) in the energy sector – to improve efficient use of water across irrigation, domestic water supply and other sectors. It will also promote water-efficient equipment and appliances nationwide.

To bridge the gap between wastewater generation and treatment capacity, the Centre plans to create a treatment ca-

capacity of 36,668 MLD (million litres per day), which would hopefully lead to circularity in the water sector in the next few years. The National Mission for Clean Ganga (NMCG) alone has sanctioned 159 projects to create a treatment capacity of 4,929 MLD.

On the conservation front, the ministry has taken up the "Jal Shakti Abhiyan: Catch the Rain" campaign with the theme "Catch the Rain - Where it Falls, When it Falls" to cover all the blocks of all districts (rural as well as urban areas) across the country during the pre-monsoon and monsoon months (till November 30).

Activities under the campaign include establishment of rooftop rainwater harvesting structures, water harvesting pits, check dams, enumeration and geotagging of all water bodies in the districts, removal of encroachments, desilting of tanks and construction of new storage tanks.

The ministry is also implementing 'Atal Bhujal Yojana' (Atal Jal), a Rs 6,000-crore central scheme for sustainable management of groundwater resources with community participation. Atal Jal is being implemented in 81 water stressed districts and 8,774 gram panchayats of seven states - Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.

The CGWB, on the other hand, has prepared 'Master Plan for Artificial Recharge to Groundwater-2020'. It envisages construction of about 1.4 crore rainwater harvesting and artificial recharge structures in the country to harness 185 billion cubic metres (BCM) of water. Besides, the National Aquifer Mapping and Management programme is being implemented by the Board for mapping aquifers (water bearing formations), their characterisation and development. It will facilitate sustainable management of groundwater resources in the country.

The Times of India- 14- May-2022

‘Sludge a goldmine, can yield manure, bricks and more’

National Mission for Clean Ganga (NMCG) is tasked with developing a circular economy model focused on reclaiming, reusing and recycling water. **Vishwa Mohan** spoke to NMCG DG **G Asok Kumar**. Edited excerpts:

Your take on water availability and management?

■ Rapid urbanisation and industrialisation have created a demand-supply gap for water. India is already a ‘water-stressed’ nation and its water demand could exceed availability by over 50% in 2050. So, there is a growing recognition of the need to move towards a circular water economy model. But sustainability, resilience and risk mitigation strategies need to be embedded in this approach.

What are the Clean Ganga Mission’s achievements with the circular economy model?

■ NMCG’s innovations like HAM-PPP (Hybrid Annuity based PPP) model and ‘One City One Operator’ model have been highly successful and are being adopted in other parts of the country. NITI Aayog is preparing standard guidelines for PPP projects in the water sector based on our HAM model. NMCG is also supporting wastewater reuse initiatives in states adjoining the Ganga.

Is the river rejuvenation approach helping achieve circularity?

■ Monetising the reuse and recycling of treated sludge and wastewater is one of the six pillars of ‘Arth Ganga’, our self-sustaining economic model. Urban local bodies (ULBs) are encouraged to adopt models for revenue generation as well as conversion of sludge into useful products such as manure, pavers, bricks, etc. The model strives to contribute at least 3% of GDP from the river basin itself.

Please share examples of ongoing water circularity projects.

■ The tertiary treatment



We’re encouraging urban local bodies to adopt models for revenue generation as well as conversion of sludge into useful products such as manure, pavers, bricks

plant at Indian Oil Corporation’s refinery in Mathura, Uttar Pradesh, was set up to supply treated wastewater to the refinery for non-potable purposes. NMCG is in advanced stages of discussions to tie up with 11 thermal power generation units for taking treated water from their STPs for different uses. We are also planning to make the best use of sludge from STPs. For example, we can make biogas from sludge. In Dinapur, Varanasi, a 140 MLD (million litres per day) plant produces enough electricity for its needs.

What role can the private sector play in this?

■ We have to reduce the use of potable water for non-potable purposes, so treating wastewater can be a lucrative business for private players and urban local bodies. Earnings from treated water used for industrial purposes can also help in subsidising safe water for poor people.

राहत की खबर : मौसम विभाग का अनुमान, 27 मई को पहुंचेगा केरल

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मई दिल्ली. देश के कई हिस्सों में प्रचंड गर्मी के बीच राहत की खबर मिली है। मौसम विभाग के मुताबिक इस साल दक्षिण-पश्चिम मानसून के सामान्य समय से चार दिन पहले 27 मई को केरल पहुंचने के आसार हैं। अगर ऐसा होता है तो 13 साल में पहली बार मानसून इतने समय पहले केरल पहुंचेगा।

मौसम विभाग ने शुक्रवार को जारी बुलेटिन में संभावना जताई कि पूर्वी मानसून अंडमान-निकोबार द्वीप समूह में 15 मई को पहुंच सकता है, लेकिन दक्षिण-पश्चिम मानसून, जिसे भारत की कृषि आधारित अर्थव्यवस्था की रीढ़ माना जाता है, केरल तट पर समय से 4 दिन पहले पहुंच सकता है। सामान्य तौर पर मानसून केरल तट पर 1 जून को पहुंचता है। मानसून की समय से पहले दस्तक की खबर ऐसे समय आई है, जब कई राज्य भीषण गर्मी झेल रहे हैं। मौसम विभाग का कहना है कि अगले चार-पांच दिन अंडमान निकोबार द्वीप समूह में हल्की से मध्यम बारिश होने का अनुमान है।

गुवाहाटी में बारिश...



गुवाहाटी. बारिश के बाद भरे पानी के बीच से वाहनों को निकालते लोग।

श्रीगंगानगर : पारा 48.1 डिग्री पर, दिल्ली में अलर्ट

राजस्थान के श्रीगंगानगर में शुक्रवार को पारा 48.1 डिग्री सेल्सियस तक पहुंच गया। राजस्थान के ही बीकानेर, चुरू में तापमान 47 डिग्री सेल्सियस दर्ज किया गया। दिल्ली के नजफगढ़ में तापमान 46 डिग्री के पार चला गया। दिल्ली के कई इलाके शुक्रवार को लू की चपेट में रहे। मौसम विभाग ने दिल्ली के लिए ऑरेंज अलर्ट जारी करते हुए वहां शनिवार को भीषण गर्मी पड़ने की चेतावनी जारी की है।

किस साल कब आया मानसून	
2021	3 जून
2020	1 जून
2019	8 जून
2018	29 मई
2017	30 मई
2016	8 जून
2015	5 जून
2014	6 जून

Amar Ujala- 14- May-2022

वजीराबाद बैराज में पानी का स्तर कम, पेयजल संकट जारी

अमर उजाला ब्यूरो

नई दिल्ली। दिल्ली जल बोर्ड के आग्रह के बावजूद हरियाणा ने यमुना नदी में पूरा पानी छोड़ना शुरू नहीं किया। वजीराबाद बैराज में अभी भी पानी का स्तर करीब तीन फीट कम है।

इस कारण दिल्ली जल बोर्ड के वजीराबाद, चंद्रावल और ओखला जल शोधक संयंत्र पूरी क्षमता से नहीं चल रहे हैं।

**जल बोर्ड के आग्रह के बाद भी
हरियाणा ने यमुना नदी में पूरा
पानी छोड़ना शुरू नहीं किया**

नतीजतन नई दिल्ली समेत दिल्ली के करीब 30 फीसदी इलाके के निवासियों को पानी की कमी का सामना करना पड़ा।

दिल्ली जल बोर्ड के अनुसार हरियाणा से यमुना नदी में शुक्रवार को भी पर्याप्त पानी नहीं आया। शुक्रवार को वजीराबाद बैराज में

पानी के सामान्य स्तर 674.50 फीट की तुलना में 671.80 फीट रह गया है। इस कारण बैराज से जुड़े वजीराबाद, चंद्रावल और ओखला जल शोधक संयंत्र पूरी क्षमता से नहीं चल रहे हैं।

उधर इन तीनों संयंत्रों से जुड़े नई दिल्ली, सिविल लाइन, हिंदू राव अस्पताल, कमला नगर, शक्ति नगर, करोल बाग, समेत कई इलाकों में शुक्रवार को पेयजल आपूर्ति काफी कम दबाव से हुई।