



AVERAGE GROUNDWATER CONSUMPTION AND ITS QUALITY IN THE COUNTRY

प्रविष्टि तिथि: 10 AUG 2026 4:47PM by PIB Delhi

The Central Ground Water Board (CGWB), jointly with the concerned State Governments/UT Administrations, assesses the Dynamic Ground Water Resources of the country. The assessment estimates total Annual Ground Water Recharge, Annual Extractable Ground Water Resource and Annual Ground Water Extraction for irrigation, domestic and industrial uses. As per Dynamic Ground Water Resources Assessment, 2025, total Annual Ground Water Recharge of the country has been assessed as 449 Billion Cubic Metres (BCM), Annual Extractable Ground Water Resource as 408 BCM and Annual Ground Water Extraction for all uses (representing groundwater consumption) as 247 BCM. Of total Annual Ground Water Extraction, 215 BCM (87%) is used for irrigation, 28 BCM (11%) for domestic purposes, including drinking water, and 4 BCM (2%) for industrial purposes.

The Dynamic Ground Water Resources Assessment does not assess groundwater consumption on a per-capita basis. However, it assesses the Stage of Ground Water Extraction, which is the ratio of Annual Ground Water Extraction to Annual Extractable Ground Water Resource. As per the Assessment, the Stage of Ground Water Extraction for the country is 60.63 per cent. The Stage of Ground Water Extraction is higher than the national average in 9 States/UTs viz Punjab, Rajasthan, Haryana, Delhi, Puducherry, Tamil Nadu, Uttar Pradesh, Chandigarh and Karnataka. Based on district-wise aggregation of the assessment results, 281 districts have a Stage of Ground Water Extraction higher than the national average. The State/UT-wise and district wise details are available at the following link: https://cgwb.gov.in/PQ/Stage_of_Groundwater_Extraction_more_than-Annexure.pdf

As per the Assessment of Water Resources of India, 2024 carried out by the Central Water Commission (CWC), the estimated average annual per capita water availability for the year 2021 was 1,573.19 cubic metres.

The Central Ground Water Board (CGWB) generates groundwater quality data through its groundwater quality monitoring programme and various scientific studies in accordance with the approved Standard Operating Procedure (SoP), which provides for more frequent and denser sampling, particularly in vulnerable areas. Groundwater quality varies spatially and temporally depending upon local hydrogeological and other conditions. As per the Annual Ground Water Quality Report, 2025, groundwater in the country is generally potable and nearly 99 per cent of the monitoring stations have groundwater quality suitable for irrigation use. Since the occurrence and spatial distribution of individual contaminants vary considerably, CGWB does not classify or rank States or districts in terms of the poorest groundwater quality. Parameter-wise groundwater quality data for the country, including the State of Bihar, are available in the Annual Ground Water Quality Report, 2025, which can be accessed at the following link: <https://cgwb.gov.in/cgwbpm/public/uploads/documents/1762854375262680475file.pdf>

As per the Annual Ground Water Quality Report, 2025, groundwater quality monitoring in Bihar indicates localized occurrence of salinity, fluoride, nitrate etc. contamination. Out of 584 groundwater samples analysed, Electrical Conductivity exceeded the permissible limit in 5 samples, fluoride in 39 samples and

nitrate in 78 samples.

Water being a State subject, planning and implementation of measures for groundwater quality improvement, groundwater management, recharge and conservation are primarily the responsibility of the respective State Governments/UT Administrations. However, the Government of India supplements the efforts of the States/UTs through scientific studies, technical guidance, policy support and financial assistance under various programmes. The major initiatives taken in this regard, including in the State of Bihar, are as follows:

- i. Central Ground Water Board (CGWB) regularly monitors groundwater quality across the country and disseminates the monitoring data through Annual Ground Water Quality Reports, Ground Water Quality Bulletins and fortnightly Ground Water Quality Alerts (GWQAs). The monitoring data are shared with the concerned State Governments and other stakeholders to facilitate identification of contaminated areas and planning of appropriate mitigation and groundwater management measures.
- ii. The Central Ground Water Board (CGWB) has completed aquifer mapping under National Aquifer Mapping and Management Programme (NAQUIM 1.0), covering about 25 lakh sq. km of the identified mappable area of the country, including about 90,567 sq. km in the State of Bihar. The aquifer maps and Aquifer Management Plans prepared under the programme have been shared with the respective State Governments to facilitate groundwater recharge, groundwater quality assessment and management, sustainable groundwater development and scientific water-resource planning. Building upon this, NAQUIM 2.0 focuses on detailed aquifer mapping and management studies in priority areas, including water-stressed regions and groundwater quality-affected areas. During 2023–24 to 2025–26, NAQUIM 2.0 covered 143 study areas spanning about 76,857 sq. km across the country, including five high-resolution aquifer mapping study areas covering about 3,202.94 sq. km in Bihar.
- iii. CGWB has developed an innovative cement-sealing technology for tapping deeper arsenic-safe aquifers in arsenic-affected areas. Using this technology, 525 arsenic-safe exploratory wells have been constructed, including 40 wells in Bihar, and technology has been shared with the State Governments for further implementation.
- iv. Jal Jeevan Mission (JJM) is being implemented in partnership with the States/UTs to provide every rural household with potable tap water of prescribed quality, in adequate quantity and on a regular and long-term basis. Under the Mission, priority is accorded to water quality affected and water scarce areas while ensuring long term source sustainability through rainwater harvesting, groundwater recharge and rejuvenation of water bodies. As on date, tap water connections have been provided to 15.90 crore rural households, covering about 82 per cent of rural households in the country, including around 1.60 crore households (95.71 per cent) in Bihar.
- v. Efforts for augmenting groundwater resources are primarily done through the Jal Shakti Abhiyan (JSA), an annual mission-mode campaign for water conservation and artificial recharge. More than 2 crore water conservation and artificial recharge works have been undertaken across the country through convergence, including around 5.75 lakh works in Bihar. Further, Jal Shakti Kendras (JSKs) have been established as district-level resource and knowledge centers to provide technical guidance on rainwater harvesting, groundwater recharge and water conservation and to support district administrations in implementation of water conservation measures.
- vi. To further strengthen the momentum of JSA, the Jal Sanchay Jan Bhagidari (JSJB) initiative was launched in 2024 with the objective of making rainwater harvesting a people's movement. More than 1.55 crore artificial groundwater recharge and water-storage works have been constructed across the country, including around 7.26 lakh works in Bihar.

Subsequently, Jal Sanchay Jan Bhagidari—Catch the Rain (JSJB-CTR) was launched on 1 June 2026 to further promote rainwater harvesting and groundwater recharge.

- vii. Mission Amrit Sarovar was launched to develop and rejuvenate at least 75 water bodies in every district of the country. Nearly 69,000 Amrit Sarovars have been developed/rejuvenated, including 2,613 in Bihar, contributing to enhanced water storage and groundwater recharge.
- viii. The Government of India launched the Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) in 2015–16 to improve physical access to irrigation, enhance on-farm water-use efficiency and promote sustainable water conservation practices. Under PMKSY, the Surface Minor Irrigation (SMI) and Repair, Renovation and Restoration (RRR) of Water Bodies schemes support restoration of traditional water bodies, construction of minor irrigation works and enhancement of groundwater recharge. In addition, the Department of Agriculture & Farmers' Welfare is implementing the Per Drop More Crop (PDMC) component to improve farm-level water-use efficiency through micro-irrigation and scientific on-farm water management.

The information was provided by **THE MINISTER OF JAL SHAKTI SHRI C R PATIL** in a written reply to a question in Rajya Sabha today.

ND/HM

(Rajya Sabha SQ 237)

(रिलीज आईडी: 2297163) आगंतुक पटल : 1320

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