

GOVERNMENT OF INDIA
MINISTRY OF JAL SHAKTI
DEPARTMENT OF WATER RESOURCES, RIVER DEVELOPMENT & GANGA
REJUVENATION
LOK SABHA
UNSTARRED QUESTION NO. 3036
ANSWERED ON 06.08.2026
NITRATE LEVELS IN GROUNDWATER

†3036. Shri NEERAJ MAURYA:

Will the Minister of JAL SHAKTI be pleased to state:

- (a) the data on nitrate levels in groundwater during the last five years, district-wise;**
- (b) the initiatives taken/being taken by the Government to reduce nitrate contamination in groundwater caused due to excessive use of fertilizers in agriculture and the impact thereof;**
- (c) the progress made in expansion of groundwater monitoring network, the use of digital tools and the proposal to expand the network to 40,000 wells by 2027 along with the expected outcomes thereof;**
- (d) the strategy of the Government to maintain a balance between groundwater extraction and recharge in over-exploited areas for sustainable use of groundwater; and**
- (e) whether the Government has conducted any study on the environmental and health impacts of chemical contamination in groundwater and if so, the details and the findings thereof?**

ANSWER

THE MINISTER OF STATE FOR JAL SHAKTI

(SHRI RAJ BHUSHAN CHOUDHARY)

- (a) Central Ground Water Board (CGWB) generates groundwater quality data on a regional scale through its annual groundwater quality monitoring programme**

and various scientific studies. The district-wise data on nitrate levels in groundwater samples recorded during the years 2019 and 2024 are available at the following link:

https://cgwb.gov.in/PQ/Nitrate_Comparison_2019_vs_2024.pdf

(b) Water being a State subject, responsibility for groundwater management including improving groundwater quality and mitigating contamination such as nitrate contamination, primarily rests with the respective State Governments. However, the Central Government supplements the efforts of the States through technical guidance, scientific inputs and various schemes and programmes.

CGWB regularly monitors groundwater quality and disseminates the monitoring data through Ground Water Quality Reports, Ground Water Quality Bulletins and fortnightly Ground Water Quality Alerts. The data are shared with the concerned State Governments and other stakeholders to facilitate identification of contaminated areas including nitrate-affected areas and planning of appropriate mitigation and groundwater management measures.

To minimise nitrate loading at source, Government is implementing the Soil Health Management and Soil Health Card Schemes under the National Project on Soil Health and Fertility of the National Mission for Sustainable Agriculture, which promote soil test-based and balanced application of fertilisers. In addition, Natural Farming is being promoted since 2019-20 through the Bharatiya Prakritik Krishi Paddhati (BPKP) under the Paramparagat Krishi Vikas Yojana (PKVY), which emphasises exclusion of synthetic chemical inputs and promotes on-farm biomass recycling, biomass mulching, and use of cow dung-urine formulations and other plant-based preparations.

Further, Government of India promotes groundwater recharge and water conservation through initiatives such as the Jal Shakti Abhiyan (JSA), Jal Sanchay Jan Bhagidari (JSJB), Mission Amrit Sarovar and Atal Mission for

Rejuvenation and Urban Transformation (AMRUT) 2.0, etc. Enhanced groundwater recharge can facilitate dilution and attenuation of nitrate contamination and together with measures such as awareness generation on the environmental impacts of excessive fertiliser use, soil test-based and need-based fertiliser application, precision farming, integrated nutrient management and adoption of organic farming and organic manure-based practices, wherever feasible, contributes to reducing nitrate contamination in groundwater.

(c) Realizing the significance of having high frequency data on ground water on near real time basis, this Ministry has taken up the process of installing Digital Water Level Recorders (DWLRs) with telemetry systems throughout the country under its various schemes and projects like Ground Water Management & Regulation (GWM &R) Scheme, Atal Bhujal Yojana etc. The state governments had also funded for carrying out the said activity under National Hydrology Project(NHP). So far, around 24,000 DWLRs have been installed across the country under the above said schemes which facilitate near real-time access to ground water related data.

(d) Water being a State subject, sustainable development and management of groundwater resources is primarily the responsibility of the State Governments. However, the Central Government facilitates the efforts of the State Governments by way of technical and financial assistance through its various schemes and projects. In this direction, the important steps taken by the Ministry of Jal Shakti and other central ministries for sustainable development of ground water resources in the country with special focus on water stressed regions are given below:-

- i. Central Ground Water Authority (CGWA) regulates and controls groundwater extraction in the country through its Guidelines dated 24.09.2020 and amendments issued thereto. Groundwater withdrawal**

by industries, infrastructure and mining projects is regulated through a No Objection Certificate (NOC) framework to promote its judicious use and sustainable management of groundwater.

- ii. Efforts of the Government for augmenting the groundwater resources of the country are mainly channeled through the flagship campaign of Jal Shakti Abhiyan (JSA), an annual mission mode programme for taking up water harvesting and artificial recharge activities. As per the available information, under JSA more than 2 cr water conservation and artificial recharge works have been taken up through convergence in the country so far, which has played a key role in enhancing the sustainability of ground water resources in water-stressed districts.**
- iii. To further strengthen the momentum of JSA, Jal Sanchay Jan Bhagidari (JSJB) initiative has been launched by the Hon'ble Prime Minister in 2024 with a vision to make rain water harvesting a mass movement in the country. By promoting community ownership and responsibility, the initiative seeks to develop cost-effective, local solutions tailored to specific water challenges across districts. More than 1.55 crore artificial groundwater recharge and storage works have been constructed across the country under this initiative. Subsequently, on 1st June, 2026 JSJB-Catch the Rain (CTR) has been launched nation-wide for water conservation and artificial recharge.**
- iv. The Department of Agriculture & Farmers' Welfare is implementing the Per Drop More Crop (PDMC) component to promote micro-irrigation and improve on-farm water-use efficiency, thereby reducing groundwater extraction and encouraging sustainable use of groundwater resources.**

- v. CGWB successfully completed NAQUIM 1.0 covering country's mappable area of about 25 lakh sq. km and provided a macro-level understanding of our nation's groundwater resources. District level reports with management plans have been prepared and shared with the state governments. CGWB has embarked upon NAQUIM 2.0, focusing on water stressed districts and quality affected pockets. Under NAQUIM 2.0 state-of-the-art technologies are harnessed for generating highly detailed scientific data which serve as an important tool for making informed decisions for sustainable groundwater management.**
- vi. 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 the Har Khet Ko Pani (HKKP) component of PMKSY, the Repair, Renovation and Restoration (RRR) of Water Bodies scheme is being implemented to restore and rejuvenate existing water bodies, thereby enhancing water availability and promoting groundwater recharge.**
- vii. Under VBG-RAMG works relating to water conservation and water harvesting are being carried out. In Critical and Overexploited Distt. 65 percent of allocated funds are earmarked for water conservation works.**
- viii. Mission Amrit Sarovar was launched by the Government of India which aimed at developing and rejuvenating at least 75 water bodies in each district of the country. As an outcome nearly 69,000 Amrit Sarovars have been constructed/rejuvenated in the country leading to enhanced water storage and ground water recharge.**

- ix. The Ministry of Housing and Urban Affairs is implementing the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) 2.0 in all Urban Local Bodies (ULBs) across the country with a focus on water security, including rejuvenation of water bodies and development of green spaces, which contribute to groundwater recharge. Under AMRUT/AMRUT 2.0, States/UTs have taken up 2,960 water body rejuvenation projects covering about 1.21 lakh acres and 4,171 parks and green space projects covering about 18,168 acres of permeable green area. Further, the Shallow Aquifer Management (SAM) initiative has been launched for scientific management of shallow urban aquifers.**
- x. The Ministry of Jal Shakti has successfully demonstrated community-led participatory groundwater management through the Atal Bhujal Yojana, implemented in 8,203 water-stressed Gram Panchayats across seven States. The programme promotes demand-side interventions such as water budgeting, crop diversification and efficient water use.**

(e) Use of Ground Water for drinking purpose having Arsenic, Fluoride, heavy metals etc. above the permissible limits over a prolonged period of time is known to cause several adverse health effects. As per M/o Health & Family Welfare, Arsenic exposure can cause skin lesions, cancer, cardiovascular diseases and developmental effects in children. Likewise, excessive fluoride in the ground water can result in dental and skeletal Fluorosis. Similarly, various other contaminants are known to produce different kinds of adverse effects.
