

Concerns Regarding Groundwater Contamination | Haryana | 14 Jan 2025

Why in News?

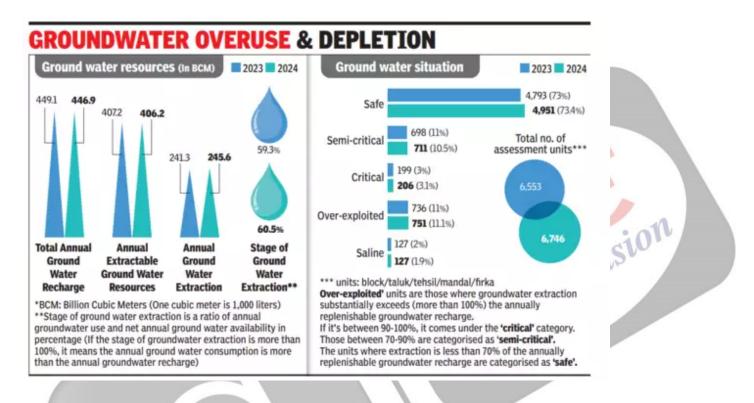
According to a recent report released by the <u>Ministry of Jal Shakti</u>, <u>groundwater</u> quality varies considerably across India, with certain states and UT such as **Arunachal Pradesh**, **Mizoram**, **Meghalaya** and **J&K** fully meeting <u>Bureau of Indian Standards</u> (BIS) <u>standards</u> while states like **Rajasthan**, **Haryana** and **Andhra Pradesh** facing widespread contamination.



Key Points

- The northeastern states of Arunachal Pradesh, Mizoram, and Nagaland, along with Jammu & Kashmir, have showcased exceptional groundwater management practices.
- A notable concern in the report, based on quality data at 15,259 groundwater monitoring locations and focused assessment at 4,982 trend stations across the country in 2023, is the "elevated levels of <u>uranium in several regions</u>".
- The samples with **high uranium concentrations** were clustered in areas identified as **over-exploited**, **critical**, **and semi-critical groundwater stress zones**, such as Rajasthan, Gujarat, Haryana, Punjab, Tamil Nadu, Andhra Pradesh and Karnataka.
 - Rajasthan and Punjab are shown as regional hotspots of uranium contamination.
- The report also reflects significant concerns over the quality of water due to high concentrations of <u>nitrate</u>, <u>fluoride</u>, <u>arsenic</u>, and <u>iron</u> in groundwater.
- Almost 20% of the samples exceeded the permissible limit for nitrate while 9% of samples had fluoride levels above the acceptable limit.
 - Arsenic contamination was found in 3.5% of samples.
 - Fluoride concentration exceeding the permissible limit is a major concern in Rajasthan, Haryana, Karnataka, Andhra Pradesh and Telangana.
 - Rajasthan, Tamil Nadu and Maharashtra have some of the highest incidences of nitrate contamination, with over 40% of water samples exceeding the permissible limit.
 - The report attributed it primarily to agricultural run-off and overuse of fertilizers.
 - Elevated **arsenic levels** were found in several states, particularly in the **floodplains of the <u>Ganga</u>** and <u>Brahmaputra rivers</u>, during the assessment.

- This includes regions of West Bengal, Jharkhand, Bihar, Uttar Pradesh, Assam, and Manipur, as well as areas in the Punjab, and Rajnandgaor district in Chhattisgarh.
- The report underlined that Rajasthan, Delhi, Gujarat, Haryan, Punjab, Telangana, Andhra Pradesh and Karnataka are the most severely affected by high Electrical Conductivity (EC) value in groundwater.
 - EC which is a measure of the ease with which water conducts electricity. It is actually
 the measure of mineralization of water and indicative of the degree of salinity of
 ground water.
 - It tells about how much **dissolved substances**, **chemicals**, and **minerals** are present in the water. Higher amounts of these impurities will lead to a **higher conductivity**.
- A rising trend in EC levels signals a deeper issue of groundwater salinization.



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