ANNUAL GROUND WATER QUALITY REPORT 2024: GEOGRAPHY

NEWS: Districts with excess nitrates in groundwater at seven-year high

WHAT'S IN THE NEWS?

India's **Annual Ground Water Quality Report 2024**, published by the CGWB under the Jal Shakti Ministry, highlights alarming levels of groundwater contamination, with pollutants like nitrates, fluoride, and uranium affecting multiple districts. The report underscores the need for sustainable practices, robust regulations, and groundwater management initiatives like Atal Bhujal Yojana to mitigate these challenges.

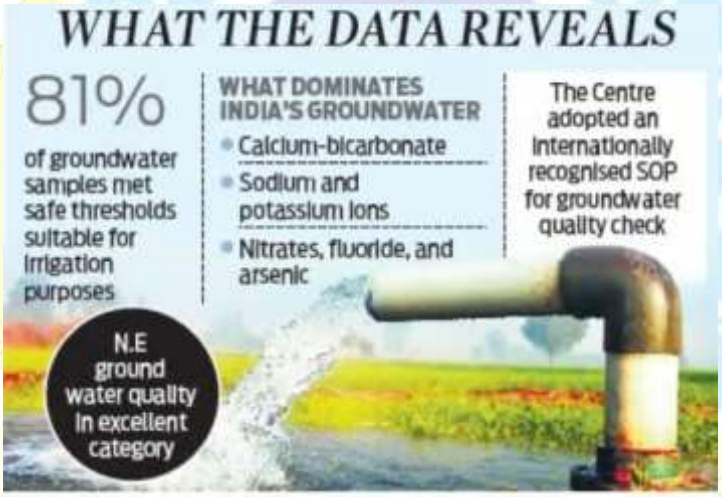
ANNUAL GROUND WATER QUALITY REPORT 2024:

1. **Groundwater Extraction**:
    - **Extraction Level**: The national average of groundwater extraction is **60.4%**, with significant regional variation.
    - **Safe Blocks**: About **73% of the analyzed blocks** fall under the 'safe' category, meaning their groundwater use is within sustainable limits.
2. **Nitrate Pollution**:
    - **Affected Districts**: High levels of nitrate contamination reported in **440 districts** across India.
    - **Worst Affected States**: Rajasthan (**49%**), Karnataka (**48%**), and Tamil Nadu (**37%**) have the highest concentrations of nitrate pollution.
3. **Fluoride and Uranium Contamination**:
    - **Fluoride**: Detected in significant concentrations in states like **Rajasthan, Haryana, Karnataka, Andhra Pradesh, and Telangana**.
    - **Uranium**: High levels observed in **Rajasthan** and **Punjab**, with many samples exceeding the safe limit of **100 parts per billion (ppb)**.
4. **Reasons for Groundwater Contamination**:
    - **Agricultural Practices**: Excessive use of nitrogen-based fertilizers causes nitrate leaching into groundwater.
    - **Industrial Pollution**: Discharge of untreated effluents leads to contamination by heavy metals and toxic substances.
    - **Geological Factors**: Natural leaching of substances like arsenic, fluoride, and uranium from rocks into groundwater.

- **Over-Extraction**: Excessive groundwater use lowers water tables, concentrating naturally occurring contaminants.

5. **Government Initiatives**:

   - **NAQUIM (National Aquifer Mapping Programme)**: Mapping and characterizing aquifers to improve groundwater resource management.
   - **Atal Bhujal Yojana**: Targets critical and overexploited blocks to improve groundwater management practices.
   - **Jal Kranti Abhiyan**: Promotes holistic and integrated water conservation and management efforts.
   - **Namami Gange Program**: Includes groundwater quality improvement in regions adjacent to the Ganga Basin.
   - **NRDWP (National Rural Drinking Water Programme)**: Focuses on mitigating groundwater contaminants like fluoride and arsenic.



6. **Policy Recommendations**:

   - **Regulations**: Strict enforcement of the **National Water Policy**, focusing on groundwater quality monitoring.
   - **Sustainable Farming**: Adoption of precision agriculture to minimize fertilizer overuse.
   - **Water Treatment**: Promotion of cost-effective filtration technologies for rural areas to address nitrate and metal contamination.
   - **Groundwater Recharge**: Large-scale implementation of rainwater harvesting and Managed Aquifer Recharge (MAR) projects.

Source: https://www.thehindu.com/sci-tech/energy-and-environment/districts-with-excess-nitrates-in-groundwater-at-seven-year-high/article69050971.ece