

**WRAP Exams · wrapexams.com**

Prelims PYQ, Mains model answers, and copy evaluation. Write to the desk for this paper, a doubt, or the AI waitlist.

**ask@wrapexams.com · +91 85951 84903 · wrapexams.com**

Q13

## **Examine the factors responsible for depleting groundwater in India. What are the steps taken by the government to mitigate such depletion of groundwater?**

UPSC Civil Services Mains 2025 · GS III · 15 marks · Environment and Conservation

Conservation, environmental pollution and degradation, environmental impact assessment.

### **Core demand of the question**

- **Name depletion drivers:** free power, paddy-wheat, urban wells, weak regulation, climate
- **Name Union and State steps:** Atal Bhujal, Jal Shakti, CGWB, crop shift, recharge

### **Revision summary**

Most Indian irrigation still leans on groundwater, so a falling table is a farm and drinking-water crisis.

Free farm power and paddy-wheat in the northwest are the classic drivers, with urban wells and weak licensing close behind.

CGWB maps show over-exploited blocks across several States.

Atal Bhujal, Jal Shakti Abhiyan, micro-irrigation and aquifer mapping are the main public replies.

Without metering and crop change, recharge structures only delay the fall.

### **Introduction**

India is not a water-poor country in the monsoon average. It is a **groundwater-stressed** country in the well. More than **sixty per cent** of irrigation and a large share of **rural drinking water** still come from underground. When the water table falls, the poor dig deeper or drink worse. Depletion is a **policy harvest**, not only a dry cloud.

### **Body**

#### **Factors**

**Green Revolution** paddy and wheat in Punjab, Haryana and parts of western UP, fed by **almost-free farm power**, turned the tubewell into a pump that never sleeps. **Sugarcane** in Maharashtra and UP does the same where canals are thin. **Urban India** drills illegal wells as tankers fail. **Industry and brick kilns** add point stress. **Weak metering and weak State groundwater laws** (even after the model Central bill) mean the resource is an **open-access commons**. **Climate:** a failed monsoon or a burst of extreme rain that runs off instead of soaking makes recharge worse. **Sand mining and lost wetlands** cut the sponge. **Population and diet** raise demand.

CGWB's assessment maps show **over-exploited blocks** clustered in the northwest, Rajasthan, parts of Tamil Nadu, Karnataka and the east-coast sedimentary belts.

## Steps taken

**Atal Bhujal Yojana** pays for **community water-security plans** in seven stressed States. **Jal Shakti Abhiyan** and **Catch the Rain** push recharge structures. **PMKSY** and **Per Drop More Crop** push micro-irrigation. **PM-KUSUM** can cut diesel but can also **cheapen pumping** if solar is unmetered - a design tension. Some States **delay paddy transplant** (Haryana's Khet-se-Paani logic, Punjab's calendar). **NAQUIM** maps aquifers. **Mission Amrit Sarovar** revives ponds. **CGWA** notifications try to license industry. Results are **uneven**: Punjab's table still falls; some Gujarati and Maharashtrian patches improved with recharge and crop talk.

Mitigation that works is **priced power, crop shift, and recharge together**. A plastic recharge pit without a paddy policy is a photo.

## Flow diagram

Free power paddy -> Falling table  
Urban wells -> Falling table  
Climate runoff -> Falling table  
Atal Bhujal Jal Shakti -> Recharge crop shift  
Recharge crop shift -> Falling table

## Conclusion

Groundwater falls because pumping is cheap, crops are thirsty, and the law is weak. Missions for recharge, micro-irrigation and community plans exist. They will bite only with power reform and less paddy where the aquifer is already red.

## Facts & figures

### Irrigation share

Wells still water a majority of India's irrigated area, which is why depletion is a food-security issue.

### Atal Bhujal Yojana

A World Bank-aided Union scheme for groundwater management through gram-level water budgets in stressed blocks.

### CGWB blocks

Central Ground Water Board classifies units as safe, semi-critical, critical or over-exploited after periodic assessment.