



## Atal Bhujal Yojana and Ground Water Management

**For Prelims:** [Atal Bhujal Yojana](#), Groundwater Management, [World Bank](#), Water Security Plans, [Central Sector Scheme](#), Ministry of Jal Shakti, [Groundwater Depletion](#), Central Ground Water Board (CGWB).

**For Mains:** Atal Bhujal Yojana and Ground Water Management, Government policies and interventions for development in various sectors and issues arising out of their design and implementation.

**Source:** [PIB](#)

### Why in News?

Recently, the 5th meeting of the **National Level Steering Committee (NLSC)** of [Atal Bhujal Yojana \(ATAL JAL\)](#) was held to review the overall progress of the scheme.

- The [World Bank](#) has been involved in the review of the program. The committee encouraged states to integrate **Water Security Plans (WSPs)** into the Gram Panchayat Development Plans which will ensure the sustainability of the scheme's approach even after the program's completion.

### What is Atal Bhujal Yojna?

- **About:**
  - ATAL JAL is a **Central Sector Scheme** for facilitating sustainable ground water management with an outlay of Rs. 6000 crore.
  - It is being implemented by the [Ministry of Jal Shakti](#).
    - The scheme is being funded by the **Government of India** and the **World Bank** on a **50:50** basis.
    - The entire World Bank's loan component and central assistance will be passed on to the States as grants.
- **Objectives:**
  - It aims to improve the management of groundwater resources in select water stressed areas in identified states viz. Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.
  - ATAL JAL promotes **panchayat led** groundwater management and **behavioural change** with a primary focus on demand-side management.

### What is the Status of Groundwater Depletion in India?

- [Groundwater Depletion](#) in India is a **major concern** because it is the primary source of drinking water. Some of the main causes of groundwater depletion in India include over-extraction of groundwater for irrigation, [Urbanisation](#), and [Climate Change](#).
- **India is the world's largest user of groundwater**, exceeding the use of the United States and China combined according to [recent UN report](#).
- **According to the** [Central Ground Water Board \(CGWB\)](#) of India, approximately 70% of the total

water used in India is from groundwater sources.

- However, the CGWB also estimates that around 25% of the country's total **groundwater extraction is unsustainable**, meaning that it is being extracted at a faster rate than it can be replenished.
- Overall, groundwater depletion in India is a **serious problem that needs to be addressed through sustainable water management practices**, such as improved irrigation techniques and conservation efforts.

## What are the Major Causes of Groundwater Depletion in India?

- **Over-Extraction of Groundwater for Irrigation:**
  - Irrigation accounts for around **80% of total water use in India**, and much of this water is sourced from groundwater.
  - As demand for food continues to grow, more and more groundwater is being extracted for irrigation, leading to depletion.
    - According to the [UN's Interconnected Disaster Risks Report 2023](#), 78% of wells in Punjab are considered overexploited, and the north-western region as a whole is predicted to experience critically low groundwater availability by 2025.
- **Climate Change:**
  - Rising temperatures and [Changing Precipitation Patterns](#) can alter the recharge rates of [Groundwater Aquifers](#), making them more vulnerable to depletion.
  - Droughts, flash floods, and [Disrupted Monsoon Events](#) are recent examples of climate change events that are placing pressure on India's groundwater resources.
- **Poor Water Management:**
  - Inefficient use of water, leaky pipes, and inadequate infrastructure for capturing and storing rainwater can all contribute to groundwater depletion.
- **Decrease in Natural Recharge:**
  - The natural recharge of groundwater aquifers can be decreased by factors such as [Deforestation](#), which can lead to [Soil Erosion](#) and reduce the amount of water that is able to seep into the ground and replenish the aquifers.

## What are the Issues Associated with Depleting Ground Water?

- **Water Scarcity:** As groundwater levels drop, there may not be enough water available for domestic, agricultural, and industrial use. This can lead to **water shortages and conflicts** over water resources.
  - A study led by the University of Michigan warns that if **Indian farmers continue to draw groundwater at the current rate**, the rate of groundwater depletion could triple by 2080. This could have severe implications for the **country's food and water security, as well as the livelihoods of over one-third of its population**.
- **Land Subsidence:** When groundwater is extracted, the **soil can become compacted, leading to [Land Subsidence](#)** (the sinking or settling of the land). This can cause damage to infrastructure, such as roads and buildings, and can also increase the risk of flooding.
- **Environmental Degradation:** Depleting groundwater can also have negative impacts on the environment. For example, when groundwater levels drop, it can cause [Saltwater Intrusion](#) in coastal areas, leading to the contamination of freshwater resources.
- **Economic Impacts:** Groundwater depletion can also **have economic impacts**, as it can lead to reduced agricultural production and increased costs for water treatment and pumping.
- **Lack of Depletion Data:** The Indian government regulates **groundwater exploitation by "notifying" highly overexploited blocks** in water-stressed states.
  - However, only about 14% of overexploited blocks are currently notified.
- **Earth's Axis to Tilt:** According to a recent study in Geophysical Research Letters, it is claimed that excessive pumping of groundwater has caused the [Earth's axis to tilt nearly 80 centimeters east](#) between 1993 and 2010 alone and contributes to sea level rise.

## What are the Government Initiatives Related to Groundwater Conservation?

- [Pradhan Mantri Krishi Sinchayee Yojana](#)

- [Jal Shakti Abhiyan- Catch the Rain Campaign](#)
- [Aquifer Mapping and Management Programme](#)
- [Atal Mission for Rejuvenation and Urban Transformation \(AMRUT\)](#)

## Way Forward

- Embrace **comprehensive and sustainable water management strategies** that address both immediate needs and long-term challenges.
- Foster **meaningful engagement with local communities**, incorporating their perspectives and knowledge in water management decisions.
- Prioritize **investments in water infrastructure** and capacity-building programs to build resilience against future water crises.
- Establish **robust monitoring and evaluation frameworks** to assess the effectiveness and impact of water management initiatives.
- Promote responsible **groundwater management and conservation practices** to ensure water availability for future generations.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

### ***Mains***

**Q.1** What are the salient features of the Jal Shakti Abhiyan launched by the Government of India for water conservation and water security? **(2020)**

**Q.2** Suggest measures to improve water storage and irrigation system to make its judicious use under the depleting scenario. **(2020)**

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