



## Groundwater Crisis

This article is based on [“Not a drop to waste”](#) which was published in The Indian Express on 30/12/2019. It talks about fast depleting groundwater in India.

The green revolution has made India a food surplus country from a food deficient country. However, these benefits have come at the cost of increased pressure on groundwater reserves.

This crisis is also reflected in [NITI Aayog’s “Composite Water Management Index”](#) (CWMI), which held that **21 Indian cities**, including Delhi, Chennai and Bengaluru, will run out of groundwater. It also noted that not only there is a quantitative crunch but **70% of India's water resources are contaminated**.

In this context, the government constituted an integrated ministry called Jal Shakti Ministry. The Jal Shakti Ministry has recently launched [Atal Bhujal Yojana](#) which aims at improving groundwater management.

### Nature of Groundwater Depletion

- India is the **world’s largest user of groundwater**, where groundwater contributes to more than **60% of the country’s irrigation resources**.
  - In India nearly **2/3<sup>rd</sup> net sown area is rain-fed**. Therefore, in order to provide farmers with adequate irrigation facilities, the government provides **power to the agriculture sector at highly subsidised rates**. This accounts for the **over-extraction of groundwater**.
  - Also, **investment in canal networks has been long-neglected**. It has led to over-exploitation and fast-depleting water tables.
- This **over-extraction of groundwater is non-renewable** since recharge rates are less than extraction rates and replenishing this resource can take thousands of years.
- Moreover, as **climate change alters the monsoon**, the large stresses on India’s groundwater resources may increase.
- The decision to focus on the groundwater crisis is significant because its over-exploitation is contributing to — as stated by NITI Aayog — **“the worst water crisis”** in India’s history.

### Atal Bhujal Yojana

It is a **World Bank-funded, central sector scheme** aimed at improving groundwater management and restoring the health of the country’s aquifers.

- It seeks to strengthen the **“institutional framework of administering groundwater resources and aims to bring about behavioural changes at the community level for sustainable groundwater resource management”**.
- The scheme will be **implemented in seven states** — Gujarat, Haryana, Karnataka, Maharashtra, Madhya Pradesh, Rajasthan and Uttar Pradesh which are over-exploited and water-stressed areas of the country.

- The Atal Bhujal Yojana seeks to **revive village-level Water User Associations** (WUAs). The scheme will strengthen the financial state of the WUAs, including allowing these bodies to retain a significant portion of irrigation fees.
  - WUAs are created by Groundwater Management and Regulation Scheme 2013.
  - According to the CWMI, less than 50% of states involve the WUAs in critical groundwater management decisions like those pertaining to irrigation resources.

## Way Forward

By emphasising on local-level institutions like the WUAs, the Atal Bhujal Yojana has signalled the inclination towards persuasive solutions. However, a lot more than, than mere persuasion is required. For example:

- Ways must be found to **balance** the demands of farmers with the imperatives of reviving the country's aquifers.
  - One solution tried out in parts of Punjab, to gradually **reduce subsidies and offer cash compensation to farmers for every unit of electricity they save**. This can be emulated in other states as well.
- The CWMI report talks of other solutions like persuading farmers to adopt more efficient technologies such as **drip irrigation**.
- The government should **promote alternatives to water-intensive crops**. For example, Maize requires only one-third of water than paddy.
- States can draw inspiration from **community water management** which is followed in Andhra Pradesh which has already shown how aquifer management and sharing of borewells can ensure equitable distribution of water.
- Finally, there is a need to set up **National Water Commission**, with multidisciplinary expertise including in hydrology (surface water), hydrogeology (groundwater), meteorology (atmosphere), river ecology, agronomy, environmental economics and participatory resource management.

### ***Drishti Mains Question***

How to tackle the groundwater crisis in India especially keeping in view the demands of the farmer?