



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 **2/3rd 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.

Drishiti Mains Question

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