

1. Not a Drop to Waste

Prelims Level: Governance - Schemes

Mains Level: GS-I Distribution of key natural resources across the world (including South Asia and the Indian sub-continent); factors responsible for the location of primary, secondary, and tertiary sector industries in various parts of the world (Including India).

Context:

- India has become a food surplus country from a food deficient country, but led to the increased pressure on Groundwater Reserves.

What does the Report Says?

- 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.

What is Government's Response?

- 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.

About 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.

Why Ground water is Depleted?

- 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 "**the worst water crisis**" in India's history.

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, 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**.

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- 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 bore wells 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.

