Towards Water Security

What is the issue?

- The World Water Day is being observed on March 22.
- In this backdrop, here is an assessment of water situation in the world and in India, and necessary measures to deal with it.

How is the share of water bodies declining?

- Most of the world's water systems that keep the ecosystems thriving and feed a growing human population are under severe stress.
- Ramsar Convention on Wetlands brought out the Global Wetland Outlook: State of World's Wetlands and their Services to People (2018) report.
- It makes an alarming observation that up to 87% of the global wetland resource has been lost since 1700.
- The analysis of satellite data of NASA underlines that half of the earth's 37 largest aquifers are declining too fast to be replenished.

How does it compare with water demand?

- The UN in its World Water Development Report 2018 notes that the global water use has increased by a factor of 6 over the past 100 years.
- It continues to grow at a rate of 1% per year.
- Competitive demand for water from various sectors has resulted in water scarcity that is affecting almost every part of the world.
- A latest report of World Bank has underlined that the Ganga River Basin could see drinking water shortage go up by as much as 39% in some States by 2040.
- Another WB report highlights that countries that lack a sufficient amount of water could see their GDPs decline by as much as 6% by 2050.
- Over two-third of the global population lives with severe water scarcity for at least one month every year, nearly half of whom live in India and China.

What is the case with India?

- In India, the annual per capita availability of water continues to decline sharply from about 5000 cubic metres in 1951 to about 1,700 cubic metres in 2019.
- The NITI Aayog in its report on Composite Water Management Index (2018)

notes that -

i. currently 600 million people face high to extreme water stress
ii. about 2 lakh die every year due to inadequate access to safe water
iii. about three-fourths of the household do not get drinking water at their premise
iv. about 70% of water is contaminated

- Moreover, the rate of groundwater extraction is so severe in India.
- NASA's findings suggest that India's water table is declining alarmingly at a rate of about 0.3 metres per year.
- At this rate of depletion, India will have only 22% of the present daily per capita water available in 2050.
- This could possibly force the country to import water for meeting the demands.

Why are large irrigation structures unfeasible any more?

- Dams do serve the purpose of supplying water for irrigation and drinking.
- However, the potential available for construction of new big dams is fast declining.
- The total irrigation potential has increased from 22.6 million hectares during the pre-Plan period to about 113 million hectares now.
- About 81% of India's ultimate irrigation potential, estimated at 140 million hectares, has already been created.
- So the scope for further expansion of irrigation infrastructure on a large scale is limited.
- Besides, dams in India have the capacity to store only about 30 days of rainfall, compared with 900 days in major river basins in arid areas of developed countries.
- Also, constructing major irrigation projects will require huge cost in future than in the past.

How significant are small water bodies?

- Small water bodies (mainly tanks) are less capital-intensive, user-friendly with fewer environmental problems.
- They significantly augment groundwater resources through sub-surface recharge.
- Most small water bodies have been encroached and subject to centuries of neglect and mismanagement.
- The Standing Committee on Water Resources highlighted that out of 5.56 lakh tanks in the country, only 4.71 lakh tanks are in use.
- The state of Tamil Nadu alone has a total of about 41,127 tanks, most of

which are in bad shape today because of poor maintenance.

What is the way forward?

- **Small water bodies** - Predictably, there will be fewer rainy days in the future but it would rain heavily in those days.
- Therefore, it is essential to renovate and restore the capacity of small water bodies to have decentralised water distribution system.
- Corrective measures are crucial not only in the areas of storage, but also in efficiency in managing supply, demand and use.
- **Agriculture** - The agricultural sector consumes over 85% of the available water today in India, and improved efficiency can save much water.
- Shifting cropping pattern from water-intensive to less water consuming crops can save significant amount of water.
- Micro-irrigation method (drip and sprinkler) of rice cultivation will enhance water use efficiency with increased crop productivity.
- **Rainwater harvesting** is one of the cheapest and easiest ways of augmenting water stock.
- Investing and promoting water-recycling technologies and storm water capturing schemes should also be given utmost emphasis.
- The proposed water conservation fee on groundwater extraction is a right step in the direction of regulating water use.

Source: BusinessLine

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