India’s Looming Water Crisis

Context: As availability of safe water is becoming a major challenge, it is pertinent for all stakeholders to collectively act for better management of the water resources. **Water Crisis in India: Key statistics**

- A Water Aid report in 2016 ranked India among the worst countries in the world for the number of people without safe water.
- An estimated 76 million people in India have no access to a safe water supply
- The Asian Development Bank has forecast that by 2030, India will have a water deficit of 50 per cent.
- The Union Ministry of Water Resources has estimated the country’s current water requirements to be around 1100 billion cubic metres per year, which is estimated to be around 1200 billion cubic metres for the year 2025 and 1447 billion cubic metres for the year 2050.
- With a projected population growth of 1.4 billion people by 2050, the total available water resources would barely match the total water requirement of the country.
- With an estimated per capita availability of 1,588 cu m/capita/year (CWC, 2010), India does not fall under the category of a water scarce country per se, rather it can be termed as a country under ‘water stress'. But it is widely believed that an aggregate estimation does not reveal the actual scenario.
- According to the 2018 edition of the UN World Water Development Report, the Central India is staring at deepening water scarcity, meaning withdrawal of 40% of the renewable surface water resources
- While ground water resources will face even greater pressure in north India, south and central India will experience high levels of risk from poor water quality in its river basins by 2050.

Note: A per capita availability of less than 1700m^3 is termed as a water-stressed condition while per capita availability below 1000m^3 is termed as a water scarcity condition. **A case of Water Crisis in Bengaluru:**

- Recently, a statement from the Centre for Science and Environment (CSE) has said that Bengaluru is among the 10 cities in the world that might be on the verge of imminent acute water crisis just as the one faced by Cape Town in South Africa
- The number of water bodies in Bengaluru has reduced by 79 per cent due to unplanned urbanisation and encroachment -- while built-up area has increased from eight per cent in 1973 to 77 per at present
- According to a statement issued by CSE, the water table in Bengaluru has shrunk from 10-12 m to 76-91 m in just two decades while the number of extraction wells has gone up from 5,000 to 0.45 million in 30 years.
- **Other Cities around the globe**: Besides Bengaluru, other cities facing similar situation include Beijing (China), Mexico City (Mexico), Nairobi (Kenya), Karachi (Pakistan), Kabul (Afghanistan) and Istanbul (Turkey)

<u>Major Reasons for Water Scarcity in India:</u> Demand and Supply gap: Rising population has led to increase in demand for water. However, there persists a gap between demand and supply which has led to water scarce scenarios in many parts of India **Poor water quality:**

- Water is contaminated with bio and chemical pollutants and is unsafe for drinking.
- The major reasons for contamination of water are sewage and wastewater drainage in water into water bodies, release of chemicals and effluents into rivers, streams and other surface water bodies.
- There has been insufficient and delayed investment in urban water-treatment facilities.

Inefficient agricultural practices and dwindling Groundwater Resources:

- Indiscriminate extraction of groundwater has led to declining water table in many parts of the country.
- India's rate of extraction has been steadily growing from a base of 90 bcm in 1980. India extracted 251 bcm of groundwater in 2010
- Presently, there are over 20 m wells pumping water with free power supply, provided by the Government.
- This has been depleting ground water, while encouraging wastage of water in many states. As a result, the water table in the country is dipping every year by 0.4 m.
- In many coastal areas, there has been heavy intrusion of sea water
- Furthermore, the utilisation of created water facilities has been sub-optimal because of poor catchment area development resulting in heavy soil erosion and siltation and inefficient use of water because of distribution of water in open canals, flood irrigation and charging for water on the basis of area irrigated instead of quantity of water supplied.
- It has been estimated that over 70% of the irrigation water is wasted by depriving irrigation to other dry areas.
- Faulty cropping pattern has led to water wastage and consequent stress on water resources in many parts of the country.

Unequal Access to Water:

- According to WHO-UNICEF data, as of 2008, about 96 per cent of the urban population and 84 per cent of the rural population has access to improved water sources.
- However, this access does not ensure adequacy and equitable distribution, and the per capita availability is not as per norms in many areas.
- The rural water supply coverage has also increased steadily in recent years; however, water quality continues to be a major concern
- Also, access to water resources is governed by power relations in the society with the poor often being differentially excluded from this process.

Poor storage:

In 2015, a report by the Ministry of Water Resources, River Development and

Ganga Rejuvenation stated that though India receives an average annual rainfall of 1170 mm, poor storage infrastructure allows it to store only 6 per cent of rainwater, compared to 250 per cent stored by developed nations.

Poor planning and infrastructure: The problem of urban water supply is due to poor and leaky distribution networks leading to large amounts of "unaccounted water."

Impact of Water Scarcity: Declining Per capita water availability:

- The per capita water availability during this period has decreased from 2,309 cu m in 1991 to 1,545 cu m in 2011 (CWC, 2010).
- The per capita water availability figures given above are the national average figures while the position is quite different in the individual river basins.
- The per capita water availability of many river basins is declining over the years due to sustained pressures of population, agriculture and industrial expansion

Impact on women:

- As primary stakeholders in water resource management, Indian women have always borne the brunt of water shortages.
- In many parts women travel long distances to fetch water.
- There is alarming impact of the water crisis on women's health, both mental and physical.

Impact on Health:

- Shortages of water could become a major obstacle to public health and development.
- One of the greatest environmental threats to health remains lack of access to safe water. The World Bank estimates that 21 percent of communicable diseases in India are linked to unsafe water and the lack of hygiene practices.

Water Disputes:

- Water conflicts have emerged due to rising water scarcity. There are many instances of Inter-state water disputes in India.
- Recently, the Supreme Court gave a verdict in Karnataka's favour in a dispute over the sharing of the Cauvery river water with Tamil Nadu. The Court acknowledged Bengaluru's need of water and held that drinking water should be given "first priority."

Government Policies and Programmes: National Water Policy:

- National Water Policy has been to govern the planning and development of water resources and their optimum utilization.
- The first National Water Policy was adopted in September, 1987. It was reviewed and updated in 2002 and later in 2012.

National River Linking Project:

- Interlinking project aims to address the issue of uneven distribution water but has proved to be contentious between the government and civil society groups
- Ecological sustainability and affordability of diverting water to deficit regions from

surplus regions put constraints on its implementation.

Atal Bhujal Yojna:

- The Indian Government has formulated the water conservation scheme Atal Bhujal Yojana (ABY) to tackle ever-deepening crisis of depleting groundwater
- The scheme emphasises on recharging ground water sources and ensures efficient use of water by involving people at local level.

National Rural Drinking Water Programme (NRDWP): It aims at providing every person in rural India with adequate safe water for drinking, cooking and other domestic basic needs on a sustainable basis. **International Effort: Water Scarce Cities Initiative**: The initiative by World Bank seeks to promote an integrated approach to managing water resources and service delivery in water-scarce cities as the basis for building resilience against climate change. **Way Ahead:**

- Micro irrigation practices like drip and sprinkler systems have to be promoted in a big way for efficient use of water for agriculture.
- Both in urban and rural areas, digging of rainwater harvesting pits must be made mandatory for all types of buildings.
- Sustained measures should be taken to prevent pollution of water bodies, contamination of groundwater and ensure proper treatment of domestic and industrial waste water.
- The UN World Water Development Report 2018 stresses nature-based solutions (NBS) to sustainably and economically manage water resources. Restoring forests, grasslands and natural wetlands, reconnecting rivers to floodplains, creating buffers of vegetation along water courses are examples of NBS that help the management of water availability and quality
- Conscious efforts need to be made at the household level and by communities, institutions and local bodies to supplement the efforts of governments and non-governmental bodies in promoting water conservation.