



Mains Practice Question

Q. The ideal solution of depleting ground water resources in India is water harvesting system. How can it be made effective in urban areas? (250 Words)

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Approach

- Give a brief introduction about status of water resources in India.
- Discuss water harvesting system and its significance.
- Discuss how it can be made effective in urban areas.
- Provide some examples of government initiatives related to water management.
- Conclude accordingly.

Introduction

- About 75% of households do not have drinking water at home, 84% rural households do not have piped water access, and 70% of India's water is contaminated, with the country currently ranked 120 among 122 in the water quality index.
- By 2030, the country's water demand is projected to be twice the available supply, implying severe water scarcity for hundreds of millions and an eventual loss of around 6% of the country's GDP.
- **Importance of Groundwater in India:**
 - Groundwater is supporting livelihoods of over 26 crore farmers and agricultural labourers.
 - Groundwater is one of the most important water sources in India accounting for 63% of all irrigation water and over 80% of rural and urban domestic water supplies.
 - Wells, including dug wells, shallow tube-wells and deep tube wells provide about 61.6% of water for irrigation, followed by canals with 24.5%.

Body

- **Water Harvesting (WH)** means capturing rainwater, where it falls and capture the runoff from, catchment and streams etc.
- **Significance of water harvesting in India:**
 - Storing rainwater helps in recharging the aquifers.
 - It helps in preventing urban flooding due to excess rain.
 - The stored water can be used for irrigation practices in farming region.
 - The water can be used for daily use and help in reducing water bills in the towns and cities.
 - Is a helpful way to tackle the scarcity of water in arid and dry regions.
 - It helps in restoring the groundwater level.
 - This renewable source of water management can help in overcoming major water-related problems, that are not only plaguing the world right now but can have a severe impact on the global population and environment in the future.
- **Water Harvesting in urban areas:**
 - Water Harvesting is done by surface runoff harvesting and rooftop rainwater harvesting.
 - Since present day urbanization has resulted both in shrinking of open spaces and very minimal area remaining unpaved, so small structures like recharge pit, recharge trenches,

dug wells, recharge shafts, and percolation tanks should be built to capture the runoff and inject rainwater into the soil during rains.

▪ **Suggestion for water conservation in India:**

- **Integrated Urban Water Management (IUWM) system:** It is a process, which ensures water supply, used water management, sanitation and stormwater management **can be planned in line with economic development and land use.**
- **Benefits:**
 - This holistic process **makes coordination among water departments easier** at the local level.
 - It also helps **cities adapt to climate changes and manage water supply** more efficiently.

▪ **Government Initiatives:**

- **Jal Jeevan mission:** The mission ensures **functionality of existing water supply systems and water connections**, water quality monitoring and testing as well as sustainable agriculture.
- **National water policy (2012):** NWP was formulated to **govern the planning and development of water resources and their optimum utilisation.** The **first NWP** was adopted in **September, 1987.** It was **reviewed and updated in 2002 and later in 2012.**
- **Jal shakti Abhiyan- catch the rain:** aims **at tapping rainwater** by constructing artificial recharge structures, revitalizing existing ponds and water bodies, creating new water bodies, provisioning check dams, rejuvenating wetlands and rivers before the onset of monsoon.
- **Atal Bhujal Yojna:** it aims for **sustainable management of groundwater with community participation.**
 - It envisages people's participation through the formation of 'Water User Associations', water budgeting, preparation & implementation of Gram-panchayat-wise water security plans, etc.

Conclusion

- With climate change and population growth leading to increased water use, **new solutions have to be conceived for better urban water management.** More people in different local contexts **need to be made aware of the challenges.**
- Similarly, there are changes required in institutions like local departments that play a crucial role. It is essential that **holistic and systemic solutions are implemented to solve water issues.**