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Mains Practice Questions

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Q. Traditional knowledge of water conservation is the only sustainable way to counter the dangers of national water emergencies. Discuss. (250 words)

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Approach

- Introduce by stressing on the need for water conservation in the age of urbanisation.
- Discuss various traditional water conservation techniques across the country.
- List out various pros and cons of traditional water conservation techniques.
- Conclude by giving out a balanced opinion on the usage of traditional methods along with modern techniques.

Introduction

- Water resources of a country constitute one of its vital assets, but its availability is changing fast both in terms of quantity as well as quality.
- The situation is further aggravated by the looming climate change which is going to alter the paradigm of management of water resources. Hence there is a need for conservation of water in this age of rapid urbanisation
- India with its rich culture and heritage in terms of images, rituals, traditional knowledge to conserve water, cultural practices and metaphors on water wisdom can suffice the efforts of water conservation in a traditional way by using cultural images on water, ancient practices and work by water warriors to affirm the value of traditional heritage on water wisdom.

Body

- India has wide temporal and spatial variation in the rainfall with some season/ areas having high rainfall while others remaining dry. Because of these variations, different parts of the country have developed different traditional methods from ancient times to conserve and store water. Some of these includes:
 - **Tanks in Karnataka:** these are artificial reservoirs to store water taking advantage of depression.
 - **Stepwell:** these are found in Rajasthan and Gujarat. It incorporated a cylinder well that extended down to the water table—provided water for drinking, washing, bathing, and the irrigation of crops.
 - **Pyne-ahar:** system of south Bihar on which the cultivation of paddy depends.
 - **Kuls:** these are diversion channels that carry water from a glacier to village. Often spanning long distances, with some over 10 km long, kuls have been around for centuries. They are the lifeline of people of Spiti valley of Himachal Pradesh and in Jammu too.
 - **Tanka system:** it is used in Rajasthan, which is a cylindrical ground pit which receives rainwater from the nearby catchment area.
 - **Bamboo drip irrigation:** used in the northeast, suitable for irrigation in hilly terrains.

- **Advantages of traditional water conservation methods:**
 - **Sustainable and cost-effective:** Traditional methods of water conservation are small scale projects that are sustainable and cost-effective
 - **Protects the environment:** Along with water conservation, traditional methods serve other purposes as well. One of them is environmental protection, unlike modern methods like dams which do more harm than help, traditional methods do not disturb the environment.
 - **Community participation:** In order to make traditional methods work, the whole of the community needs to work. For example, for rainwater harvesting, every house needs to have a system installed. Community participation gives people a sense of belonging and hence, work more efficiently.
 - **Suitable to local mass:** the local people are familiar with the traditional methods of water conservation and hence it becomes easier for them to adapt to these methods.
- **Disadvantages of traditional water conservation techniques:**
 - **Low efficiency:** the efficiency rate of traditional techniques is low. Therefore, they are not suitable for a large urban population.
 - **Not suitable for urban masses:** there is very less vacant land available in urban areas for traditional infrastructures. Also, urban masses are not familiar with these ideas.
 - **Lack of leadership:** to make traditional methods successful, the whole community needs to give their contribution. In the absence of a strong leadership, these techniques may turn into failures.

Conclusion

These traditional systems are ecologically safe, viable and cost-effective alternatives to rejuvenate India's depleted water resources. But using only traditional methods is not enough. Productively combining these structures with modern rainwater saving techniques, such as percolation tanks, injection wells and subsurface barriers, could be the answer to India's perennial water woes.