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Significance of Water Conservation and Management

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Abstract:

Water is a major natural resource for human existence and sustaining all nature. It plays an important role not only in the sanitation of rural and urban communities but is also essential for all forms of agriculture and most of the industrial production processes. But experts have always included water as one of the major resources that will be the most challenging task to manage in the future. It would not be an exaggeration to say that India is on the verge of a serious water crisis. The existing water is in crisis, the country's rivers are getting polluted, water harvesting systems are deteriorating and the groundwater level is continuously depleting. Despite all this, the topic of the water crisis and its management has not found a place in the discussions of the general public in India.

Keywords: Water resources, Water management, Ground water, Water conservation, Pollution, Water utilization

Introduction:

Considering some facts about water availability and use in India, only 4% of the global freshwater source is present in India, which has to provide water to 18% of the global population (Indian Population). Also, the respective states that by the year 2030 the demand for water in India will almost double its supply. The per capita availability of water in the country was 6000 cubic meters in the year 1994, which decreased to 2300 cubic meters in the year 2000 and is expected to further decrease to 1600 meters by the year 2025. Whereas in rural areas of the country about 70% of people are forced to live on polluted water and 33 crore people on dry places. About 70% of the water in India is polluted, due to which India was ranked 120 out of 122 countries on the water quality index (Sakati et al., 2023).

Water consumption in the country:

About 85% of the total water consumption in the country is used in agriculture, while only 10% is used in industries and only 5% is used in households.

Current status of water management:

Apart from the main rivers flowing in India, we get an average of 1170 ml of rainwater annually. Apart from this, we also get 1608 billion cubic meters of water every year from renewable water conservation. With the kind of strong backup we have got the ninth-largest freshwater reserve in the world. The water crisis in India reflects our mismanagement of water conservation not water scarcity (Waikar, 2014).

Meaning of water management:

Water management refers to the optimum use of water resources and due to the ever-increasing demand for water; the need for proper management of water is being felt throughout the country for many years (Singh and Narayanan, 2015). Water management can also include the management of water-related hazards such as flood, drought, pollution, etc., and proper water management by an individual entity also includes the management of water in such a way that it reaches all the people in sufficient quantity (Sahal, 2022).

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Why is water management needed:

- Due to the population explosion in the country, the level of pollution in various water bodies like rivers, lakes and ponds is increasing day by day.
- The groundwater level has depleted relatively significantly in most parts of the country. It was revealed in a UNESCO report that India is the largest user of groundwater in the world.
- Water management helps in developing an efficient irrigation system for the betterment of agriculture in the country.
- Water resources are limited and we have to preserve them for the next generation also and this cannot be possible in the absence of proper water management.
- Water management helps to maintain the cycle of nature and existing biodiversity.
- Since water plays an important role in sanitation, cleanliness in the country cannot be fully ensured unless the water is properly managed.
- The water crisis also negatively affects the economy of the country and with the help of water management; this negative effect can be avoided by eliminating the water crisis.

Challenges before water management in India:

* Bridging the gap between the demand and supply of water.
* Providing enough water for food production and balancing use between competing demands.
* To meet the growing demands of metropolitans and other big cities.
* To treat wastewater.
* Sharing of water with neighboring countries and among co-basin states etc.

Major methods of water management:

1. Wastewater management system: An appropriate sewage system helps in the disposal of wastewater cleanly and safely. In this, wastewater is recycled and made usable so that it can be sent back to people's homes for drinking and domestic purposes.

2. Irrigation system: A good quality irrigation system can be ensured for the nutrition of crops in drought-affected areas. These systems can be managed so that water is not wasted and can also be recycled or use rainwater to reduce the water supply unnecessarily.

3. Taking care of natural water bodies: Natural water sources like lakes, rivers and seas are quite important. Both freshwater ecosystems and marine ecosystems are home to diversity of different organisms and without the support of these ecosystems, these organisms would become extinct.

4. Water conservation: It is necessary to emphasize water conservation in the country and any entity (whether it is an individual or a company) can save several gallons of water daily by reducing the use of unnecessary equipment.

5. Other ways: Storing water by rainwater harvesting, provision of tanks, ponds, check dams, etc. to store rainwater on the surface.

@75 policy and water management of NITI Aayog:

In the year 2018, NITI Aayog released the Action Policy for Innovative India @75, under which it was decided that by the year 2022-23, India's water resources management strategy should facilitate water security to ensure adequate availability of water for life, agriculture, economic development, ecology and environment

Providing adequate safe drinking water for sanitation to citizens and animals.

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Ensuring proper irrigation system in all farms (water to every farm) and improving agricultural water utilization.

Ensuring the uninterrupted and clean flow of Ganga and its tributaries.

Way ahead:

- There is an opaque and non-participatory bureaucratic approach to the functioning of water governance institutions in India states. Therefore, it cannot be denied that there is a need for improvement in water administration in the country.
- We must have reliable information and related data on natural disasters like drought and floods at the earliest so that they can be dealt with in time and possible damages can be minimized.
- Important decisions related to raising the groundwater level and regulating groundwater use must be taken at the earliest.
- The condition of rivers in the country remains pathetic and efforts by the present government to make the river Ganga pollution free may not have achieved the expected success, so the condition of rivers in the country must be seriously considered and suitable policies should be made to make them pollution-free (Kumar, 2004).

Conclusion:

Water is the most valuable resource on the earth and we have to protect it not only for ourselves but also for future generations. At present, when India as well as the whole world is facing a water crisis, it is necessary to pay more serious attention to it. Policies related to water management or water conservation exist in India but the problem is at the level of implementation of these policies. Therefore, the laxity in the implementation of policies should be ensured so that the biggest problem of water mismanagement in the country can be addressed.

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