Natural Distribution of Water in India: Water availability in India depends greatly the seasonal monsoons. The monsoons bring heavy rain over most of the country between June and October. Only Tamil Nadu is the exception and receives over half of its rain from October to November. India ranges from places having waterless conditions (Thar Desert) to places with rainforest climate (North Eastern States). In general, the northern half of the country sees greater extremes in rainfall.

India has a large network of rivers too. The three Major rivers, Indus, Ganga and the Brahmaputra originate in the Himalayas and drain nearly two-thirds of the land area.

These rivers also account for nearly the same proportion of India's total water resources. Water in these rivers is strongly influenced by the monsoons. During the monsoons, water levels in rivers increase greatly and may result in floods. On the other hand, during the dry season, water levels go down quite a bit in most large rivers. Smaller tributaries and streams generally dry off completely. To regulate water flow in these rivers and distribute water more evenly throughout the year large dams have been built on a number of rivers.

On the other hand, the mountainous and hilly regions of north and west do not allow adequate seepage. So, groundwater is mostly limited to lower-lying areas such as valleys. The areas of our country also do not allow proper absorption of water, and therefore do not have large continuous aquifers.

Though the coastal plains are a rich source of groundwater, they can be contaminated by saltwater inflow caused by the over-pumping of groundwater. The Gangetic plains are, however, rich in groundwater as the aquifers keep getting recharged and restored.

Scarcity of Water: Scarcity of water is defined as a situation where there is insufficient water to satisfy normal requirements. Though water is a renewable resource, we humans are using it at a faster rate than it is being replenished. There are various factors contributing to the depletion of the water table.

1. **Increasing Population**: Growing population has resulted in a growing demand for houses, offices, shops roads, etc. As a result, open areas like parks and playgrounds are used for construction. This reduces the seepage of water into the ground. Moreover, construction work requires more water for which underground water is used. As the rate of consumption of underground water is more than seepage, it results in a depletion of the water table.
2. **Increasing Industries**: The rapidly growing population has also resulted in an increase in the number of industries. Water is used in almost every stage of production of things that we use. This has put a heavy load, especially on the freshwater ecosystem.
3. **Agricultural Activities:** India is an agricultural country and farmers have to depend on rain for irrigating their fields. However, erratic monsoons result in excess use of groundwater thereby decreasing the underground water.
4. **Deforestation**: Trees have the ability to hold water. With deforestation, the number of plants decrease, hence the water keeps flowing towards the sea and the groundwater is not recharged.

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In India, some causes of water scarcity are:

1. **Uncontrolled use of borewell technology for extracting groundwater:** Farmers have overexp1oited groundwater resources in our country due to uncertain monsoons and an unreliable state water supply.
2. **Pollution of freshwater resources**: This is due to the discharge of untreated sewage from homes, toxic chemicals from industries, and of pesticides and insecticides used by farmers into water bodies.
3. **No effective measures for water conservation** Very little has been done for groundwater recharge and for care of freshwater ecosystems.

Water Management and Conservation

Water is meant for the development and sustenance of all communities. Studies show that the total demand for water by 2031 is expected to be 50% higher than that for today. In addition to this, water resources are unequally distributed and lack proper planning and management. Water is required for domestic purpose, agriculture, hydro-power, thermal power, navigation, recreation, etc. Utilization of water in various uses should be optimized and awareness programs about water as a scarce resource should be promoted. Water management is the need of the hour because it is a limited and valuable resource on our planet. Water management should be done under some rules and regulations. Having realised the importance of water conservation, following steps may help in managing water for future:

1. Repair a leaking tap immediately and avoid activities like bathing, brushing, washing utensils, etc. under a running tap
2. Floods should be controlled by constructing dams and by interlinking of rivers.
3. Farmers should use drip system for irrigation to avoid wastage of water.
4. Domestic and industrial waste water should be properly treated and recycled.
5. We should plant more and more trees to prevent rainwater from flowing off and to allow it to seep underground thus, recharging the water table.
6. Rainwater should be harvested, i.e., it should be collected on rooftops or directed to the ground to raise water table.
7. Many places in India have an age-old practice of water storage and water recharge system like the Bawris (also called step-well or baolis). These are used to collect and store rainwater which is used during drought or when there is shortage of water. The Bawris which were discontinued from being used are now again revived in many places.

Effect of Water Scarcity on Life

1. Crop Failure
2. Fall in production, especially that of dairy, timber and fishery
3. Spread of diseases, epidemics take a toll of millions.
4. Loss of life in all forms due to starvation
5. Migration of people from drought affected areas
6. Conversion of regions into desert lands, permanent or temporary, depending on the severity of drought

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