

Chapter 3 - Water Resources

In Chapter 3 of Class 10 Geography, you will learn about water resources. The chapter begins with the availability of fresh water on earth and how the situation of scarcity of water generates. The chapter discusses the pros and cons of constructing dams on rivers. In the end, the chapter talks about Rain Water Harvesting as a means to conserve water. Here, we have compiled the [CBSE Notes for Class 10 Geography Chapter 3 on Water Resources](#). These notes cover all the important topics which are discussed in the chapter.

Water

Three-fourth of the earth's surface is covered with water but only a small proportion of it accounts for freshwater that can be put to use. Water is a renewable resource.

Water Scarcity and the Need for Water Conservation and Management

The availability of water resources varies over space and time.

- Water scarcity is caused by over-exploitation, excessive use and unequal access to water among different social groups.
- Water resources are being over-exploited to expand irrigated areas for dry-season agriculture.
- In some areas, water is sufficiently available to meet the needs of the people. But, those areas still suffer from water scarcity due to bad quality of water.

The need of the hour is to conserve and manage our water resources:

- To safeguard ourselves from health hazards.
- To ensure food security, continuation of our livelihoods and productive activities.
- To prevent degradation of our natural ecosystems.

Multi-Purpose River Projects and Integrated Water Resources Management

In ancient times, we used to conserve water by constructing sophisticated hydraulic structures like dams built of stone rubble, reservoirs or lakes, embankments and canals for irrigation. We have continued this tradition in modern India by building dams in most of our river basins.

Dams

A dam is a barrier across flowing water that obstructs, directs or retards the flow, often creating a reservoir, lake or impoundment. "Dam" refers to the reservoir rather than the structure.

Uses of Dam:

Dams are built:

- To impound rivers and rainwater that can be used later to irrigate agricultural fields.
- For electricity generation.
- Water supply for domestic and industrial uses.
- Flood control.
- Recreation, inland navigation and fish breeding.

Side effects of Creating Dams

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- Regulating and damming of rivers affect their natural flow.
- Poorer the habitats for the rivers' aquatic life.
- Fragment rivers make it difficult for aquatic fauna to migrate.
- Dams created on the floodplains submerge the existing vegetation and soil leading to its decomposition over a period of time.
- Creating of large dams has been the cause of many new environmental movements like the 'Narmada Bachao Andolan' and the 'Tehri Dam Andolan' etc.
- Many times local people had to give up their land, livelihood and their control over resources for the construction of the dam.

Most of the objections to the projects arose due to their failure to achieve the purposes for which they were built. Most of the dams were constructed to control floods but, these dams have triggered floods. Dams have also caused extensive soil erosion. Excessive use of water has resulted in earthquakes, caused water-borne diseases and pests and pollution.

Have a look at the India Major Rivers and Dams in the map below:

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Rain Water Harvesting

Rainwater harvesting is a simple method by which rainfall is collected for future usage. The collected rainwater may be stored, utilised in different ways or directly used for recharge purposes.

Different methods have been adopted in different areas for Rain Water Harvesting.

1. In hill and mountainous regions, people built diversion channels like the '**guls**' or '**kuls**' of the Western Himalayas for agriculture.
2. "**Rooftop rainwater harvesting**" is commonly practised to store drinking water, particularly in Rajasthan.
3. In the flood plains of Bengal, people developed inundation channels to irrigate their fields.
4. In arid and semi-arid regions, agricultural fields were converted into rain-fed storage structures that allowed the water to stand and moisten the soil such as 'khadins' in Jaisalmer and 'Johads' in other parts of Rajasthan.
5. The **tankas** are part of the well-developed rooftop rainwater harvesting system and are built inside the main house or the courtyard. This is mainly practised in Rajasthan, particularly in Bikaner, Phalodi and Barmer areas for saving the rainwater. Many houses constructed underground rooms adjoining the 'tanka' to beat the summer heat as it would keep the room cool.

Tamil Nadu is the first state in India which has made rooftop rainwater harvesting structure compulsory to all the houses across the state. There are legal provisions to punish the defaulters.