

# NCERT SOLUTIONS

CLASS - 12th



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Class : 12th

Subject : Geography

Chapter : 6

Chapter Name : WATER RESOURCES

Q1 Choose the right answers of the following from the given options.

(i) Which one of the following types describes water as a resource?

- (a) Abiotic resource
- (b) Non-renewable Resources
- (c) Biotic Resource
- (d) Cyclic Resource

(ii) Which one of the following south Indian states has the highest groundwater utilisation (in percent) of its total ground water potential?

- (a) Tamil Nadu
- (b) Karnataka
- (c) Andhra Pradesh
- (d) Kerala

(iii) The highest proportion of the total water used in the country is in which one of the following sectors?

- (a) Irrigation
- (b) Industries
- (c) Domestic use

(d) None of the above

Answer.

(i) (d) Cyclic Resource

(ii) (a) Tamil Nadu

(iii) (a) Irrigation

Page : 70 , Block Name : Multiple Choice Questions

Q2 Answer the following questions in about 30 words.

(i) It is said that the water resources in India have been depleting very fast. Discuss the factors responsible for depletion of water resources?

(ii) What factors are responsible for the highest groundwater development in the states of Punjab, Haryana, and Tamil Nadu?

(iii) Why the share of agricultural sector in total water used in the country is expected to decline?

(iv) What can be the possible impacts of consumption of contaminated/unclean water on the people?

Answer.

(i) The per capita availability of water is dwindling day-by-day. The reasons are both natural and anthropogenic. Excessive demand of water, poor storage, low rainfall, urbanisation are few reasons. Further available water resources are also getting polluted with industrial, agricultural and domestic effluents, and this is limiting the availability of usable water.

(ii) Groundwater development in the states of Punjab, Haryana, and Tamil Nadu is high since these states are agriculturally advanced. Due to the spatio-temporal variability and uncertainty in rainfall irrigation development became necessary.

Further introduction of HYV crops due to its water intensive nature required development of irrigation facilities in Punjab, Haryana and western Uttar Pradesh. Out of the total Net sown area which is the total land under cultivation more than 85 percent is under irrigation.

Wheat and rice are grown mainly with the help of irrigation in these states. Of the total net irrigated area 76.1 per cent in Punjab and 51.3 per cent in Haryana are irrigated through wells

and tubewells. This shows that these states utilise large proportion of their groundwater potential which has resulted in groundwater depletion in these states. Therefore, groundwater development is high in these states.

(iii) The share of agricultural sector in total water used in the country is expected to decline in the future because there has been an increase in consumption of water by industries especially food processing industries and a shift in sectoral GDP. Also with an increase in population and urbanisation, domestic demand for water is on the rise.

Use of water sprinklers and micro irrigation technology for irrigating agriculture fields will bring down consumption of water in agriculture sector. Besides this, developing water-saving technologies and methods like watershed management and rainwater harvesting also help to reduce agricultural dependence on water.

(iv) Water gets polluted by foreign matter, such as microorganisms, chemicals, industrial and other wastes. Such matters deteriorate the quality of water and render it unfit for human use. According to the statistics of World Health Organisation, one fourth of communicable diseases in India spread through contaminated or unclean water. Drinking contaminated water, in medical terms, may cause water-related diseases including diarrhea, bacterial dysentery, cholera, typhoid and many other contagious illnesses.

Page : 71 , Block Name : Short Answer Question

Q3 Answer the following questions in about 150 words.

(i) Discuss the availability of water resources in the country and factors that determine its spatial distribution?

(ii) The depleting water resources may lead to social conflicts and disputes. Elaborate it with suitable examples?

(iii) What is watershed management? Do you think it can play an important role in sustainable development?

Answer.

(i) India accounts for only 4 percent of the world's water resources and about 16 percent of the world's population. The total water from precipitation in the country in a year is about 4,000 cubic km. However it is not evenly distributed rainfall.

The factors that determine its spatial distribution are:

#### Availability of surface water resources

1. Surface water resources include rivers, lakes, ponds, and tanks. Due to topographical, hydrological and geographical factors, the spread of these resources vary highly across states.
2. Further only 32 percent of the available surface water can be utilised.
3. Given that precipitation is relatively high in the catchment areas of the Ganga, the Brahmaputra and Barak rivers, account for 60 percent of the total surface water resources.
4. These basins cover maximum states and have many tributaries

#### Groundwater resources

1. Due to their gigantic size, The Ganga and the Brahmaputra basins, have about 46 per cent of the total groundwater resources. The level of groundwater utilisation is relatively high in the regions lying in these river basins.
2. States like Chhattisgarh, Odisha, Kerala, etc. utilise only a small proportion of their groundwater potentials. Gujarat, Uttar Pradesh, Bihar, Tripura and Maharashtra are utilising their ground water resources at a moderate rate.

#### Lagoons and Backwaters

1. India has a vast coastline and the coast is very indented in some states.
2. Due to this, a number of lagoons and lakes have formed.
3. Eg. Chilika Lake in Odisha, Pulicat lake in Andhra Pradesh and Tamil Nadu, Vembanad in Kerala etc.

(ii) Commodity which is in short supply or scarce in nature is likely to cause disputes and conflicts and water shortage is no exception. There are many water disputes and conflicts that are taking place at the national and international levels today.

Most of the rivers of India are plagued with inter-state disputes. Almost all the major rivers of the country are inter-state rivers as they flow in two or more states and their waters are shared by two or more than two states.

Following are some of the inter-state river water disputes in India :-

- Cauvery Water Dispute between Tamil Nadu, Karnataka and Kerala.
- The Krishna Water Dispute between Maharashtra, Karnataka and Andhra Pradesh.
- The Tungabhadra Water Dispute between Andhra Pradesh and Karnataka.
- The Aliyar and Bhivani River Water Dispute between Tamil Nadu and Kerala.

- The Godavari River Water Dispute between Andhra Pradesh, Madhya Pradesh, Chhattisgarh, Odisha and Karnataka.
- The Narmada Water Dispute between Gujarat, Maharashtra, Madhya Pradesh and Rajasthan.
- The Mahi River Dispute between Gujarat, Rajasthan and Madhya Pradesh.

This shows that the depleting water resources may lead to social conflicts and disputes.

(iii) Watershed management refers to efficient management and conservation of water resources. It involves prevention of loss of water due to runoff and its storage through various methods like percolation tanks, recharge wells, etc.

It includes regeneration and judicious use of all resources – like land, water, plants and animals in the region. It's main aim is to ensure sustainable and balanced relationship between nature and society.

The Central and State Governments have initiated many watershed development and management programmes in the country :-

- Haryali is a watershed development project sponsored by the Central Government which aims at enabling the rural population to conserve water for drinking, irrigation, fisheries and afforestation. The Project is being executed by Gram Panchayats with people's participation.
- Neeru-Meeru (Water and You) programme (in Andhra Pradesh) and Arvary Pani Sansad (in Alwar, Rajasthan) have taken up constructions of various water-harvesting structures such as percolation tanks, dug out ponds (Johad), check dams, etc. through people's participation.
- Tamil Nadu has made water harvesting structures in the houses compulsory. No building can be constructed without making structures for water harvesting.

Watershed development projects have been successful in rejuvenating environment and economy. Through this integrated water resource management approach water availability can be ensured on sustainable basis.

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