

# Class 12 Geography NCERT Solutions Chapter 4 Water Resources

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## Class 12 Geography Chapter 4 NCERT Textbook Questions Solved

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1. Choose the right answers of the followings from the given options:

Question 1.(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

Answer:

- (d) Cyclic Resource

Question 1.(ii)

Which one of the following rivers has the highest replenishable ground water resource in the country?

- (a) The Indus
- (b) The Brahmaputra
- (c) The Ganga
- (d) The Godavari

Answer:

- (a) The Indus

Question 1.(iii)

Which of the following figures in cubic kilometres correctly shows the total annual precipitation in India?

- (a) 2,000
- (b) 3,000
- (c) 4,000
- (d) 5,000

Answer:

- (c) 4,000

Question 1.(iv)

Which one of the following south Indian states has the highest groundwater utilization (in per cent) of its total ground water potential?

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

(d) Kerala

Answer:

(a) Tamil Nadu

Question 1.(v)

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:

(a) Irrigation

2. Answer the following questions in about 30 words:

Question 2.(i)

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

Answer:

Water scarcity is possibly to pose the greatest challenge on account of its increased demand coupled with shrinking supplies due to over utilization and pollution. The per capita availability of water is dwindling day by day due to increase in population. The available water resources are also getting polluted with industrial, agricultural and domestic effluents, and this, in turn, is further limiting the availability of usable water resources.

Some states utilize large proportion of their ground water potential which has resulted in ground water depletion in these states. Over withdrawals in some states like Rajasthan, and Maharashtra has increased fluoride concentration in ground-water, and this practice has led to increase in concentration of arsenic in parts of West Bengal and Bihar. Water, gets polluted by foreign matters such as micro-organisms, chemicals, industrial, domestic and other wastes. When toxic substances enter lakes, streams, rivers, ocean and other water bodies, they get dissolved or lie suspended in water. This results in pollution of water whereby quality of water deteriorates affecting aquatic systems. Sometimes, these pollutants also seep down and pollute groundwater. The Ganga and the Yamuna are the two highly polluted rivers in the country,

Question 2.(ii)

What factors are responsible for the highest groundwater depletion in the states of Punjab, Haryana, and Tamil Nadu?

Answer:

The states of Punjab, Haryana and Tamil Nadu have agriculture supported mainly by irrigated water and the main source for it is the underground water. These regions were the target regions for green revolution. All the green revolution crops are water intensive, hence the demand for water in these states is very high. These regions have soft alluvial

soil which allows the rain water to seep down and recharge the underground water table. This area is easy to be dug, hence extraction of underground water is easiest source of water.

It has also been found that irrigated lands have higher agricultural productivity than unirrigated land. Further, the high yielding varieties of crops need regular moisture supply, which is made possible only by a developed irrigation systems. In Punjab, Haryana and Western Uttar Pradesh more than 85 per cent of their net sown area 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 tube wells. This shows that these states utilize large proportion of their groundwater potential which has resulted in groundwater depletion in these states. The over-use of groundwater resources has led to decline in ground water table in these states.

Question 2.(iii)

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

Answer:

At present the agriculture use accounts for the highest share of utilization for both ground and surface water resources. The main reason being that the agriculture accounts or the largest share in economy of the country, but in recent times the share of secondary and tertiary activities have been rising in the economy. This in turn will reduce the share of the agriculture and increase the share of industrial and domestic sector in the consumption of all resources including the water resources of the country.

Question 2.(iv)

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

Answer:

Water constitutes a large proportion of human body. Water intake is an essential part of human life. Contaminated water intake is one of the biggest reasons of many chronic diseases. The intake of contaminated water is the cause of severe water borne disease and is also one of the main causes of high infant mortality rates. The contaminated water is the reason for several diseases like Cholera, typhoid, etc. which are major killer diseases in India.

3. Answer the following questions in about 150 words:

Question 3.(i)

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

Answer:

India accounts for about 2.45 per cent of world's surface area, 4 per cent of the world's water resources and about 16 per cent of world's population. The total water available from precipitation in the country in a year is about 4,000 cubic km. The availability from surface water and replenishable groundwater is 1,869 cubic km. Out of this only 60 per

cent can be put to beneficial uses. Due to topographical, hydrological and other constraints, only about 690 cubic km (32 per cent) of the available surface water can be utilised. Water flow in a river depends on size of its catchment area or river basin and rainfall within its catchment area.

Precipitation in India has very high spatial variation, and it is mainly concentrated in Monsoon season. Rivers in the country like the Ganga, the Brahmaputra, and the Indus have huge catchment areas. Given that precipitation is relatively high in the catchment areas of the Ganga, the Brahmaputra and the Barak rivers, these rivers, although account for only about one-third of the total area in the country, have 60 per cent of the total surface water resources. Moreover Himalayan rivers are glacial fed perennial whereas Southern rivers are rainfed seasonal rivers. Much of the annual water flow in south Indian rivers like the Godavari, the Krishna, and the Kaveri has been harnessed, but it is yet to be done in the Brahmaputra and the Ganga basins.

**Groundwater Resources:** The total replenishable groundwater resources in the country are about 432 cubic km. The level of groundwater utilisation is relatively high in the river basins lying in north-western region and parts of south India. The groundwater utilisation is very high in the states of Punjab, Haryana, Rajasthan, and Tamil Nadu. However, there are States like Chhattisgarh, Odisha, Kerala, etc., which utilise only a small proportion of their groundwater potentials. States like Gujarat, Uttar Pradesh, Bihar, Tripura and Maharashtra are utilising their ground water resources at a moderate rate.

**Lagoons and Backwaters:** India has a vast coastline and the coast is very indented in some states. Due to this, a number of lagoons and lakes have formed. The States like Kerala, Odisha and West Bengal have vast surface water resources in these lagoons and lakes. Water is generally used for fishing and irrigating certain varieties of paddy crops, coconut, etc.

**Surface Water Resources:** There are four major sources of surface water. These are rivers, lakes, ponds, and tanks. In the country, there are about 10,360 rivers and their tributaries longer than 1.6 km each. The mean annual flow in all the river basins in India is estimated to be 1,869 cubic km.

Question 3.(ii)

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

Answer:

It can be said with some certainty that the societies will witness demographic transition, geographical shift of population, technological advancement, degradation of environment and water scarcity. Water scarcity is possibly to pose the greatest challenge on account of its increased demand coupled with shrinking supplies due to over utilisation and pollution. Water is a cyclic resource with abundant supplies on the globe. Approximately, 71 per cent of the earth's surface is covered with it but fresh water constitutes only about 3 per cent of the total water. In fact, a very small proportion of fresh water is effectively

available for human use. The availability of fresh water varies over space and time. The tensions and disputes on sharing and control of this scarce resource are becoming contested issues among communities, regions, and states.

India accounts for about 2.45 per cent of world's surface area, 4 per cent of the world's water resources and about 16 per cent of world's population. The total utilizable water resource in the country is only 1,122 cubic km. This dearth of utilizable water has been cause of several disputes in India at local, state and national levels. Sadly in India there is conflict on issues like social structure (casteism, communalism etc.)

Rivers of Northern India have condition of water surplus and many regions face flood situation whereas, the rivers in Southern India have perennial flow concentrated in the months of monsoon leading to water scarcity during rest of the year. To solve the situation there have been many proposed river linkage schemes which became causes for disputes among the states over the sharing of water resources.

It is the scarcity of water that has caused longstanding disputes between the state of Karnataka and Tamil Nadu over sharing of waters of Kaveri River. Sharing of water of Brahmaputra has always been a cause of conflict between India and Bangladesh. Much to India's dislike and concern China is planning to build a dam on river Brahmaputra.

Question 3.(iii)

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

Answer:

Watershed management basically refers to efficient management and conservation of surface and groundwater resources with community participation. It involves prevention of runoff and storage and recharge of groundwater through various methods like percolation tanks, recharge wells, etc. However, in broad sense watershed management includes conservation, regeneration and judicious use of all resources – natural (like land, water, plants and animals) and human within a watershed. Watershed management aims at bringing about balance between natural resources on the one hand and society on the other. The success of watershed development largely depends upon community participation. In short community is the soul of the entire scheme.

Watershed management not only conserves the entire ecosystem of an area but also empowers the people by making them socially and economically self reliant as it has community participation as its vital component. Since local people understand the local ecosystem in the best way, therefore they conserve in the best way. Sustainable development is the development, which fulfills the needs of present generation without depriving the future generations from the benefits arising from the resources. Watershed management helps conserving the environment along with fulfilling need of the people.

The importance of watershed management in sustainable development has been identified and many programmes both by government and NGOs have been launched for the watershed management. Some examples are—

Haryalis, 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.

## **Class 12 Geography Chapter 4 NCERT Extra Questions**

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### **Class 12 Geography Chapter 4 Very Short Answer Type Questions**

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Question 1.

What percentage of world's water resource does India have?

Answer:

About 4% of the world's water resource.

Question 2.

What is the percentage of fresh water to total water in the world?

Answer:

About 71% of the earth's surface is covered with water but fresh water is about 3% of the total water resource.

Question 3.

What is the total replenishable groundwater resource of India?

Answer:

The total replenishable groundwater resource of India is about 432 cubic km.

Question 4.

Define rainwater harvesting.

Answer:

Rain water harvesting is a method to capture and store rainwater for various uses. It is also used to recharge groundwater aquifers. It is a low cost and eco-friendly technique for preserving every drop of water by guiding the rain water to bore well, pits and wells. Rainwater harvesting increases water availability, checks the declining groundwater table, improves the quality of groundwater, controls soil erosion and flooding.

Question 5.

What is watershed management?

Answer:

Watershed management basically refers to efficient management and conservation of surface and groundwater resources. It involves prevention of runoff and storage and recharge of groundwater through various methods like percolation tanks, recharge wells, etc. However, in broad sense watershed management includes conservation, regeneration and judicious use of all resources – natural (like land, water, plants and animals) and human with in a watershed.

Question 6.

What are the water conservation projects of Andhra Pradesh & Rajasthan?

Answer:

Neeru-Meeru (Water and You) programme (in Andhra Pradesh) and Arvary Pani Sansad (in Alwar, Rajasthan) are the two water-harvesting projects through people's participation.

Question 7.

What are the different water harvesting structures?

Answer:

Percolation tanks, recharge wells, dugout ponds (Johad).

Question 8.

Which was the first state to make water harvesting system compulsory?

Answer:

Tamil Nadu.

Question 9.

What are the rainwater harvesting structures in Rajasthan?

Answer:

The rainwater harvesting structures in Rajasthan is a Kund or Tanka (a covered underground tank) near or in the house or village and Johads are used to store harvested rain water. Rooftop rain water is diverted and stored in them.

Question 10.

In spite of the fact that 71% of the earth is covered with water, water is scarce.

Substantiate.

Answer:

Approximately, 71 per cent of the earth's surface is covered with it but only 3% of it is fresh water. A very small proportion of fresh water is effectively available for human use. The availability of fresh water varies over space and time. The tensions and disputes on sharing and control of this scarce resource are becoming contested issues among communities, regions, and states. The assessment, efficient use and conservation of water, therefore, become necessary to ensure development.

Question 11.

In which sector the share of total water used in the country is high?

Answer:

In agricultural sector the share of total water is high in the country.

Question 12.

Compare water resources of India and its population with respect of the world.

Answer:

16% of the world population live in India but only 4% of total water resources of the world belongs to India.

Question 13.

Mention four sources of surface water.

Answer:

There are four major sources of surface water: rivers, lakes, ponds, and tanks.

Question 14.

Give an account of river water in India.

Answer:

There are about 10,360 rivers and their tributaries longer than 1.6 km each. The mean annual flow in all the river basins in India is estimated to be 1,869 cubic km.

Question 15.

In which rivers precipitation rates are high and what are its effects?

Answer:

Precipitation is relatively high in the catchment areas of the Ganga, the Brahmaputra and the Barak rivers. As a result, these rivers, although account for only about one-third of the total area in the country, have 60 per cent of the total surface water resources.

Question 16.

Which states have surface water in the form of lagoons and lakes? For what purpose is it used?

Answer:

The states like Kerala, Odisha and West Bengal have vast surface water resources in these lagoons and lakes. Although, water is generally brackish in these water bodies, it is used for fishing and irrigating certain varieties of paddy crops, coconut, etc. .

Question 17.

Where is the highest replenishable water concentrated?

Answer:

The total replenishable groundwater resources in the country are about 432 cubic km. The Ganga and the Brahmaputra basins, have about 46 per cent of the total replenishable groundwater resources. The level of groundwater utilisation is relatively high in the river basins lying in north-western region and parts of south India.

Question 18.

What is the utility of irrigation in agriculture?

Answer:

Irrigation makes it possible to use:

- (a) Modern farming methods
- (b) Multi-cropping for more production.
- (c) Reduces dependence on monsoon which is very uncertain.

Question 19.

How does irrigation help in multi-cropping?

Answer:

Through irrigation land can be utilised throughout the year but if irrigation facilities are not there we can grow crops only in rainy season. Therefore, it helps in multi-cropping.



Question 20.

What do you mean by water pollution?

Answer:

Water pollution is alteration of the physical, biological, chemical, and radiological integrity of water due to human activities, any unwanted contaminating property that renders a water supply unfit for its designated use.

Question 21.

Why is rainwater harvesting important?

Answer:

Rainwater harvesting is important to conserve rainwater and utilise it for various purposes like irrigation, cleaning, washing, etc.

Question 22.

How has Ralegan Siddhi become a source of inspiration?

Answer:

Ralegan Siddhi is a small village in the district of Ahmadnagar, Maharashtra. It has become an example for watershed development throughout the country.

Question 23.

How is quality of national water resources monitored?

Answer:

The Central Pollution Control Board (CPCB) in collaboration with State Pollution Control Boards has been monitoring water quality of national aquatic resources at 507 stations.

### **Class 12 Geography Chapter 4 Short Answer Type Questions**

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Question 1.

What are the three things essential for water resource development?

Answer:

A very small proportion of fresh water is available for human use. The availability of fresh water varies over space and time. The tensions and disputes on sharing and control of this scarce resource have become serious problems. So assessment, efficient use and Conservation of water, have become necessary to ensure development.

Question 2.

Why does the use of groundwater vary from state to state?

Answer:

The rate of groundwater utilization is very high in the river basins of north west India and parts of south India, where the rain water percolates down easily through the soft soils and recharge underground water table. It is also easy to construct wells and tube wells here. Surface water is more utilized in the crystalline rocks of south India.

Question 3.

What are the emerging water problems facing India?

Answer:

The over-use of groundwater resources has led to decline in ground water table in the

states of Punjab, Haryana, western Uttar Pradesh. In fact, over withdrawals in some states like Rajasthan and Maharashtra has increased fluoride concentration in groundwater, and this practice has led to increase in concentration of arsenic in parts of West Bengal and Bihar. The per capita availability of water is dwindling day by day due to increase in population. The available water resources are also getting polluted with industrial, agricultural and domestic effluents, and this, in turn, is further limiting the availability of usable water resources.

Question 4.

When was National Water Policy undertaken? Give its key features.

Answer:

The National Water Policy was undertaken in 2002, to prioritize the 'water allocation in the different sectors in the following order:

Drinking water, Irrigation, Hydro power, Navigation, Industrial and Other uses.

Highlights:

- Providing drinking water is the first priority.
- Irrigation and multi-purpose projects should include drinking water in areas where it is not available.
- Regulate and limit groundwater exploitation.
- Regular monitoring of water sources for quality.
- Awareness and conservation consciousness should be promoted.

Question 5.

What do you mean by degradation of water resources?

Answer:

Water quality refers to the purity of water, or water without unwanted foreign substances. Water gets polluted by foreign matters such as micro-organisms, chemicals, industrial and other wastes. Such matters deteriorate the quality of water and render it unfit for human use. When toxic substances enter lakes, streams, rivers, ocean and other water bodies, they get dissolved or lie suspended in water. This results in pollution of water whereby the quality of water deteriorates affecting aquatic systems.

Question 6.

Why is the level of groundwater utilization relatively high in the river basins lying in north-western region and parts of South India?

Answer:

- Water percolates easily in alluvial soil construction is easy.
- Northern states are mostly the agricultural states where the water is used for irrigation.
- South India is hard in rocky terrain, percolation of the water becomes difficult, moreover, canal construction is costly because of topography.

Question 7.

Name the three states which have larger area under irrigation and why?

Answer:

The three states are:

1. Punjab
2. Haryana
3. Western Uttar Pradesh

It is because:

- Wheat and rice are grown mainly with the help of irrigation in these states.
- Net irrigated area of Punjab and Haryana are irrigated through wells and tube wells.
- These states utilize large proportion of their groundwater potential.
- Canal irrigation is the biggest source of irrigation in North India.
- In peninsular India, tank irrigation is mostly done.

Question 8.

What are the implications of using groundwater in drought-prone areas of Rajasthan, Gujarat, Maharashtra and Tamil Nadu?

Answer:

- The over-use of groundwater resources has led to decline in its level.
- Rajasthan and Maharashtra have increased fluoride concentration in groundwater.
- This practice has led to increase in concentration of arsenic in West Bengal and Bihar.
- This practice has increased salinity in the soil of Punjab and Haryana.

Question 9.

What are the four major problems in the development of water resources in India?

Answer:

Water resources in India faced many problems such as availability, quality, usage and management.

- **Availability:** Water resources are excess in some regions such as West Bengal whereas it is deficient in other parts of the country like Rajasthan and peninsular India.
- **Quality:** Water pollution is caused by domestic waste, industrial waste and chemical use in agriculture.
- **Usage:** Underground water resources could be used in Northern India whereas in Gujarat, Maharashtra, West Bengal, it increases the concentration of arsenic, fluoride and salinity in the soil.
- **Management:** The availability of fresh water is less and is also declining whereas the demand of water is getting rapid due to industrialization and urbanization, moreover inter-state water disputes are increasing. There are seepage losses and lack of improved irrigation facilities.

Question 10.

Why there is a need to conserve water resources?

Answer:

- Increasing demand for agricultural sector, domestic use due to urbanisation and industrialisation & rise in population.
- Sustainable development.
- High cost of desalinisation.

Due to above reasons, we need to conserve water resources.

Question 11.

Give a few examples where water can be recycled and reused to improve the availability of fresh water.

Answer:

- Use of water of lesser quality such as reclaimed waste-water would be an attractive option for industries.
- Fire fighting and industrialization cooling to reduce their water cost.
- Urban areas water after bathing and washing utensils can be used for gardening.
- Water used for washing vehicle can also be used for gardening.

### **Class 12 Geography Chapter 4 Long Answer Type Questions**

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Question 1.

What are the major sources of surface water?

Answer:

There are four major sources of surface water. These are rivers, lakes, ponds, and tanks. In the country, there are about 10,360 rivers and their tributaries longer than 1.6 km each. The mean annual flow in all the river basins in India is estimated to be 1,869 cubic km rate. Due to topographical, hydrological and other constraints, only about 690 cubic km (32 per cent) of the available surface water can be utilised. Water flow in a river depends on size of its catchment area or river basin and rainfall within its catchment area.

Precipitation in India has spatio temporal variation, and it is mainly concentrated in Monsoon season. Some of the rivers in the country like the Ganga, Brahmaputra, and the Indus have huge catchment areas. Precipitation is high in the catchment areas of the Ganga, the Brahmaputra and the Barak rivers, these rivers, although account for only about one-third of the total area in the country, have 60 per cent of the total surface water resources. A good percentage of water flow in south Indian rivers like the Godavari, the Krishna, and the Kaveri has been harnessed. The other sources of surface water like lakes, ponds and tanks are utilized. In south India, tank irrigation is common.

Question 2.

With the example of 'Ralegan Siddhi' show how watershed development projects are imperative for development.

Answer:

Ralegan Siddhi' is a village in Maharashtra, which was under abject poverty. Transformation started with the initiative of an army personnel, who took up watershed development. Voluntary work by the villagers along with their monetary contribution changed the village from a poverty stricken village to a role model for others to emulate.

Work began with a percolation tank. A youth group called Tarun Mandal was formed which worked to ban the dowry system, caste discrimination and other social evils. Cultivation of water intensive crops and practice of open grazing were banned. Crops with low water requirements were encouraged. Nyay Panchayat was set up to look in to the local problems. Utilising local resources, a school was constructed. The villagers want to buy land from adjoining villages for developmental purposes. The village transformed to a self reliant and sufficient village.

Question 3.

Give some possible solutions to water problem in India.

Answer:

In order to solve water problem in India constructive holistic approach should be adopted and implemented.

- There is a wide scope to use rainwater harvesting technique to conserve precious water resource. It can be done by harvesting rainwater on rooftops and open spaces. Harvesting rainwater also decreases the community dependence on groundwater for domestic use.
- Besides bridging the demand supply gap, it can also save energy to pump groundwater as recharge leads to rise in groundwater table. Urban areas can specially benefit from rainwater harvesting as water demand has already outstripped supply in most of the cities and towns.
- Desalinization of water particularly in coastal areas and brackish water in arid and semi-arid areas.
- Transfer of water from water surplus areas to water deficit areas through inter linking of rivers can be important remedies for solving water problem in India.
- Pricing of water for households and communities should be considered more seriously.

Question 4.

Describe the features of surface water and the groundwater distribution in India.

Answer:

Surface water:

- Major sources of surface water are rivers, lakes, ponds and tanks. In the country there are about 10,360 rivers and their tributaries are averagely longer than 1.6 km each.
- The mean annual flow in all the river basins in India is estimated to be 1869 cubic kms.
- Due to topographical, hydrological and other constraints only 32% of available surface water can be utilised.
- The Ganga, the Brahmaputra and the Indus river account for 60% of the total water resources in India. The expanse of these rivers are broader and larger and receive heavy rainfall.

Groundwater resources:

- Groundwater resources in our country are about 432 cubic kms.
- The Ganga and the Brahmaputra have larger replenishable groundwater resources.
- The level of groundwater utilization is high in river basins relatively lying in north western region and in parts of south India.
- The groundwater utilization is very high in states of Punjab, Haryana, Rajasthan and Tamil Nadu.
- The states like Chhattisgarh, Odisha and Kerala utilize only small proportion of ground water.
- The states like Kerala, Odisha and West Bengal have vast surface water resources in legumes and lake also. Although water is generally brackish in these water bodies they are used for fishing, irrigating certain amount of paddy and crops like coconut, etc.
- The states like Gujarat, U.P, Bihar, Tripura and Maharashtra, are utilizing groundwater resources at a moderate rate.

Question 5.

Explain important features of National Water Policy, 2002.

Answer:

The following points are the salient features of National Water Policy, 2002.

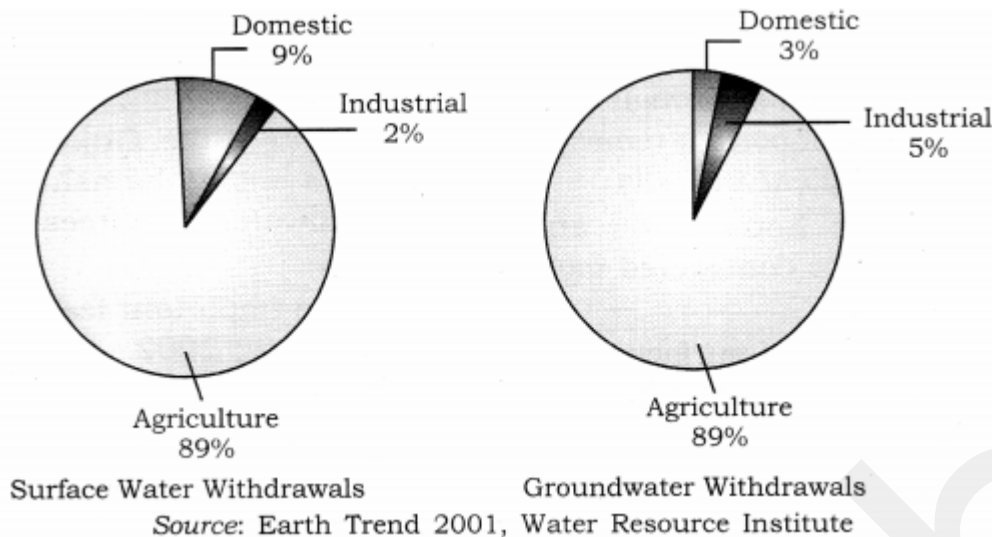
- Emphasis on the need for a national water framework law, comprehensive legislation for optimum development of inter-state rivers and river valleys, amendment of Irrigation Acts, Indian Easements Act, 1882, etc.
- Water, after meeting the pre-emptive needs for safe drinking water and sanitation, achieving food security, supporting poor people dependent on agriculture for their livelihood and high priority allocation for minimum ecosystem needs, be treated as economic good so as to promote its conservation and efficient use.
- Ecological needs of the river should be determined recognizing that river flows are characterized by low or no flows, small floods (freshets), large floods and flow variability should accommodate development needs. A portion of river flows should be kept aside to meet ecological needs ensuring that the proportional low and high flow releases correspond in time closely to the natural flow regime.
- Adaptation strategies in view of climate change for designing and management of water resource structures, review of acceptability criteria and increasing water storage have been emphasized.
- A system to evolve the benchmarks for water uses for different purposes, i.e., water footprints, and water auditing be developed to ensure efficient use

## **Class 12 Geography Chapter 4 Diagram Based Questions**

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Question 1.

Study the diagrams given below and compare. Give reasons for their variation. Domestic



Answer:

From the above diagrams, it is clear that, in both the cases it is the agricultural sector that uses maximum share of both surface and groundwater. We need more crops in order to feed our large population for which water is essential. It's easy for households to utilize more of surface water from rivers, ponds etc. Industries can afford to utilize more of underground water.

### Class 12 Geography Chapter 4 Higher Order Thinking Skills (HOTS)

Question 1.

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

Answer:

Inter-state River Water Disputes in India! Most rivers of India are plagued with inter-state disputes. Almost all the major rivers of the country are inter-state rivers and their waters are shared by, two or more than two states.

After independence, demand for water had been increasing at an accelerated pace due to rapid growth of population, agricultural development, urbanization, industrialization, etc. These developments have led to several inter-state disputes about sharing of water of these rivers.

Following inter-state river water disputes are worth mentioning:

- The 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.

Question 2.

Why do we need to encourage watershed development?

Answer:

We need to encourage watershed development due to following reasons:

- To prevent run-off.
- To increase storage and recharge of groundwater.
- Conservation, regeneration and judicious use of all resources like land, water, plants, animals etc.
- To encourage community and people participation, for example, Neeru-Meeru, Haiyali etc.

### **Class 12 Geography Chapter 4 Important Questions**

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Very Short Answer Type Questions:

Question 1.

Which river basin of India has the highest percentage of replenishable utilization of groundwater resources? (Delhi 2010)

Answer:

Ganga.

Question 2.

Which sector (economic-activity) uses most of the surface and groundwater in India? (A.1.2010)

Answer:

Agriculture.

Question 3.

Name the two metropolitan cities which are the main polluters of river Ganga before it reaches Varanasi. (OBSE 2011)

Answer:

- Kanpur
- Allahabad.

Question 4.

How can you help in improving the quality of water in your locality? (A.I. 2017)

Answer:

Improvement in quality of water:

- Judicious use of water
- Creating awareness – importance of water  
(Any one point to be mentioned)

Short Answer Type Questions:



Question 1.

Why is conservation and management of water resources essential in India? Explain any three reasons. (CBSE 2008)

Answer:

Reasons for conservation and management of water resources are:

- There is a declining availability of fresh water and increasing demand, Per capita availability of water is declining day by day.
- There is a great demand of water due to increase of population. Demand of water is increasing in different sectors like agriculture, industries and for domestic uses.
- Pollution of water is responsible for declining the quality of water. This causes the un-usability of this precious life giving resource.

Question 2.

Study the diagram given below and answer the questions that follow: (CBSE 2011)

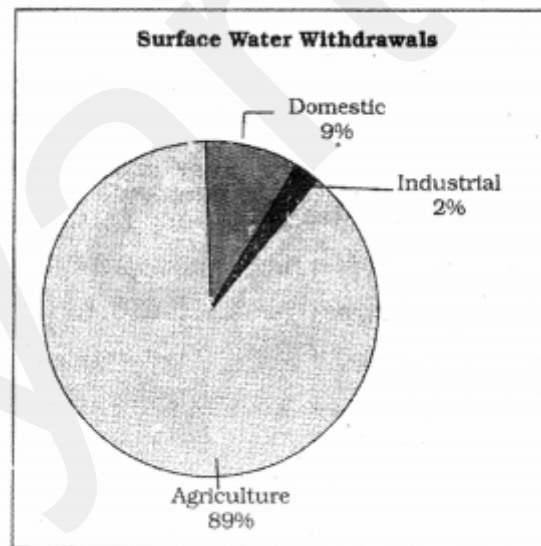
(i) Why is the share of surface water very limited to the industrial sector?

(ii) Which sector accounts for most of the surface water withdrawals and why? Give one reason.

Answer:

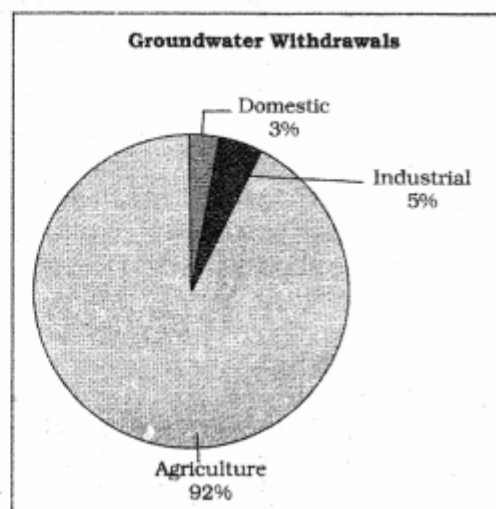
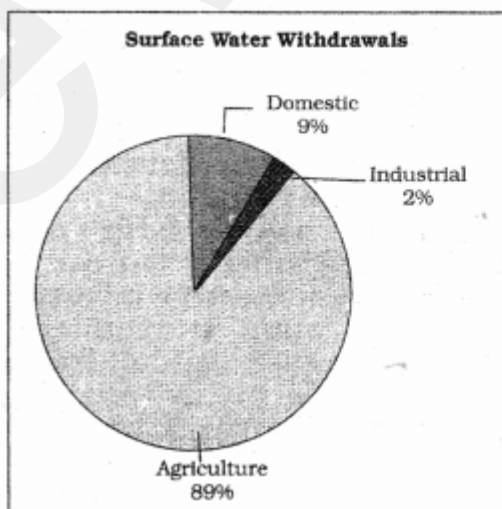
(i) Because of less development of industries and higher water utilization in agricultural sector. However, in future, with development, the share of industrial sector in the country is likely to increase,

(ii) Agricultural sector accounts for most of the surface water withdrawals. Because, agricultural sector requires more water for irrigation.



Question 3.

Study the given diagram and answer the questions that follow:



- (i) Which sector accounts for most of the groundwater utilisation?  
(ii) Why is the share of water utilization in domestic sector lower in groundwater as compared to surface water?

Answer:

- (i) Agricultural sector as irrigation is essential to enhance agricultural productivity.  
(ii) (a) People prefer to live in areas with easy accessibility productivity.  
(b) Underground water is not always available.  
(c) Underground water is not always accessible and portable.

Question 4.

Why is there a great need for irrigation in India? Explain any three reasons. (Foreign 2011)

OR

Explain the importance of irrigation for agriculture in India. (CBSE 2016)

Answer:

There is a great need for irrigation in India because:

- Spatio-temporal variability in rainfall in the country.
- Water requirement of rice, sugarcane, jute, etc. is very high which can meet only through irrigation.
- Provision of irrigation makes multiple cropping possible.

Question 5.

Examine any three causes for the deterioration of 'quality of water' in India. (CBSE 2013)

Answer:

Three causes for the deterioration of 'quality of water' in India are:

- Water gets polluted by foreign matters such as microorganisms, chemicals, industrial and other wastes which deteriorate the quality of water and render it unfit for human use.
- When toxic substances enter lakes, streams, rivers, ocean and other water bodies, they get dissolved or lie suspended in water. This results in pollution of water whereby quality of water deteriorates affecting aquatic systems.
- The pollutants also seep down and pollute groundwater and causes the underground water unfit for human uses.

Question 6.

Analyse the economic and social values of rainwater harvesting. (CBSE 2014)

Answer:

- It develops harmony with nature.
- It helps to save energy.
- It helps in the economic development of the country.
- Saving energy means 'save wealth'.
- It decreases the dependence of community on ground water.

- It create awareness about conservation.
- It brings people closer as community.
- Reduces floods, saves life and property.
- It develops problem solving attitude.
- It reduces conflicts among society

Question 7.

“The assessment, efficient use and conservation of water are necessary to ensure development.” Explain in the light of values regarding conservation of water resources. (CBSE 2015)

Answer:

- India has only 4 per cent of the world’s water resources but has 16 per cent of world’s population.
- Due to topographical, hydrological and other constraints, only 32 per cent of the available surface water can be utilized.
- Total utilizable water resource in India is very limited. Demand is increasing day by day.
- Population is increasing. Life-style is also changing.
- Water pollution is making water resource unusable.

Question 8.

How is rainwater harvesting helped in the development of certain areas of India? Explain with answer. (A.I. 2016)

Answer:

Rain water harvesting is a method to capture and store rainwater for various uses. It is a low cost and eco-friendly technique for preserving every drop of water by guiding the rain water to bore well, pits and wells. It has been practiced through various methods by different communities in the country for a long time – like the Tankas in Rajasthan , Rooftop collection, percolation pits etc. Ralegan Siddhi in Maharashtra is a leading example for the same.

Question 9.

“Indiscriminate use of water by increasing population and industrial expansion has led to degradation of the water quality considerably in India.” Explain the values that can help in maintaining the quality of water. (A.I. 2017)

Answer:

The values that can help in maintaining the Quality of water:

- Judicious/optimum use of water,
  - Controlling population,
  - Recycle and Reuse of water,
  - Watershed Management
  - Rain water harvesting
  - Rules and regulations
- (Any three points to be explained)

## Long Answer Type Questions:

### Question 1.

“Scarcity of water on account of its increased demand, possess possibility the greatest demand in India.” Analyse the statement. (Delhi 2017)

Answer:

Increasing demand for water is a challenge to India:

- India has a large population with limited water resources.
- Rising demand for increasing population.
- More water is required for irrigation to increase agricultural production as rainfall is highly variable.
- Rapid industrial growth is increasing demand for water.
- Urbanization and modern life style has increased the demand.
- Water pollution has added to water shortage.

(Any 5 points to be analysed)

### Question 2.

Explain how Watershed management’ and ‘rainwater harvesting’ are the methods of efficient management and conservation of surface water resources in India. (CBSE 2018)

Answer:

Watershed management:

- It prevents runoff, recharges ground water through percolation tanks, recharge wells etc.
- Haryali is a watershed development project which aims at enabling the rural population to conserve water for drinking, irrigation, fisheries and afforestation.
- It includes conservation, regeneration and judicious use of all resources: natural and human within a watershed.
- Neeru-Meeru programme in Andhra Pradesh and Arvaiy Pani Sansad in Rajasthan have taken up construction of various water harvesting structures such as percolation tanks, check dams etc.

Rainwater Harvesting:

- Traditional rainwater harvesting mainly in rural areas is done by using surface storage bodies like lakes, ponds, irrigation tanks, etc.
- In Rajasthan rainwater harvesting structures, locally known as kunds or tankas are constructed near or in the house or village to store harvested rainwater.
- It raises water availability, increases the quantity and improves the quality of ground water by diluting pollutants, contaminants, prevents soil erosion, reduces the fury of floods and checks salt water intrusion in coastal areas.