

CLASS 10 GEOGRAPHY

Water Resources





Water Resources

One Shot Live Revision Series

Date	Class 10 th Live @ 6:00 PM Daily	Class 9 th <mark>Live</mark> @ 8:45 PM Daily
17 Sep 23	The rise of nationalism in Europe	The French Revolution
18 Sep 23	Resources and Development	India - Size and Location
19 Sep 23	Power Sharing	What is democracy? Why democracy?
20 Sep 23	Development	The story of village Palampur
21 Sep 23	Nationalism in India	Socialism in Europe and the Russian Revolution
22 Sep 23	Forest and Wildlife Resources	Physical Features of India
23 Sep 23	Federalism	Constitutional Design
24 Sep 23	Sectors of the Indian Economy	People as Resource
25 Sep 23	Gender, Religion and Caste	Electoral politics
26 Sep 23	Water Resources	Drainage



Introduction



- Water is essential for all forms of life
- All water moves within the hydrological cycle, ensuring that water is a renewable resource

Water scarcity

Jeevan Mission (JJM)

- Causes
- Conservation and management



- Multi purpose river projects and integrated water resources management.
- Rain water harvesting

The Goal of JJM is to enable every rural household get assured supply of potable piped water at a service level of 55 litres per capita per day regularly on long-term basis by ensuring functionality of the tap water connections.





Causes of water scarcity



Quantitative and Qualitative aspect



Causes

- Uneven availability of water resources
- Over-exploitation, excessive use and unequal access to water
- **Population growth**
- Wastage of fresh drinking water Intensive industrialisation and urbanisation
- Agriculture as the major consumer of water

Factors Affecting the Quality of Water

- **Domestic and industrial wastes**
- Indiscriminate use of chemicals like fertilisers and pesticides
- **Overdrawing of groundwater** leading to fluoride concentration

... Conservation and management is essential.





Multipurpose River Projects and Integrated Water Resources Management

Hydraulic Structures in Ancient India

- In the first century B.C., Sringaverapura near Allahabad had sophisticated water harvesting system channelling the flood water of the river Ganga.
- During the time of Chandragupta Maurya, dams, lakes and irrigation systems were extensively built.
- Evidences of sophisticated irrigation works have also been found in Kalinga, (Odisha), Nagarjunakonda (Andhra Pradesh), Bennur (Karnataka), Kolhapur (Maharashtra), etc.
- In the 11th Century, Bhopal Lake, one of the largest artificial lakes of its time was built.
- In the 14th Century, the tank in Hauz Khas, Delhi was constructed by Iltutmish for supplying water to Siri Fort area.







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.

Multipurpose river projects



- Used to irrigate agricultural fields.
- **Electricity generation**
- Water supply for domestic and industrial uses.
- Flood control
- Recreation.
- Inland navigation and fish breeding

... Jawaharlal Nehru proudly proclaimed the dams as the temples of modern India





Opposition and criticism of dams

- Regulating and damming of rivers affect their natural flow leading to poorer, habitats for the river's aquatic life.
- Dams Created on the floodplains submerge the Existing vegetation and Soil, leading to its decomposition oven a period of time
- Creating large dams has been the cause of many new Environmental movements like the 'Narmada Bachao Andolan and the Tehri Dam Andolan etc. leading to large scale displacement.
- Many times local people had to give up their land, livelihood and their Control over resources for the Construction of the dam.
- Changed the cropping pattern and increased the social gap.



Most of the objections to the projects arose due to their failure to achieve the purposes for which they were built

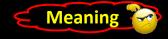
- Caused flood → Floods have devastated life and property.
- Caused extensive soil erosion.
- Sedimentation also meant that the flood plains were deprived of silt, a natural fertiliser, further adding on to the problem of land degradation.
- It was also observed that the multi-purpose projects induced earthquakes.
- Caused water-borne diseases and pests and pollution.





Rain water harvesting







Sophisticated ancient water harvesting system.

- In hill and mountainous regions, people built diversion channels like the 'guls' or 'kuls of the Western Himalayas for agriculture
- In the flood plains of Bengal, people developed inundation channels to irrigate their fields.
- 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 like the 'khadins' in Jaisalmer and 'Johads'
 in other parts of Rajasthan.
- In the semi-arid and arid regions had underground tanks or tankas for storing drinking water.

 The tankas were part of the well-developed rooftop rainwater harvesting system. Rooftop rainwater harvesting was commonly practised to store drinking water, particularly in Rajasthan.







Rooftop rainwater harvesting in practise

- Modern Rooftop rainwater harvesting.
- Tanka system is semiarid and arid regions
 - Reliable source of drinking water
 - Beat the summer heat
- 200 household in Gendathur, Mysuru, Karnataka have installed household rooftop rainwater system.
- Bamboo drip irrigation system in Meghalaya.







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