Class - X^th

WATER RESOURCES

Introduction

- 3/4^th of the surface is covered with water.
- Usable part :- • Surface Run off • Ground water
  - → Renewed by Hydrological Cycle

Question Then why Water is Scarce ??? ooo

Reasons → 96% is in Ocean & only 25% is fresh water.

→ 70% fresh water is occuring as Ice Sheets & Glaciers.

→ India recieve only 4% of global precipitation & rank 133 in term of water availability person per annum.

→ Total Renewable water resources are estimated at 1897 sq/km per annum.

→ By 2025, large part will face absolute water scarcity.

WATER SCARCITY - I

Abundance and Renewability of Water → How can it be scarce?

We think ... It may be in area of drought affected or deserts.

But its due to

- Unequal water distibution among various sections of society.
- excessive use
- over exploitation

FALKEN MARKS

Water stress occurs when availability of water is b/w 1000 & 1600 cubic m/pers / year.

WATER SCARCITY - II

Quantitative Aspect

Cities → Population ↑ → Demand of water + food ↑ → More Irigation ↑

* Exploitation & falling ground water level.

Qualitative Aspect

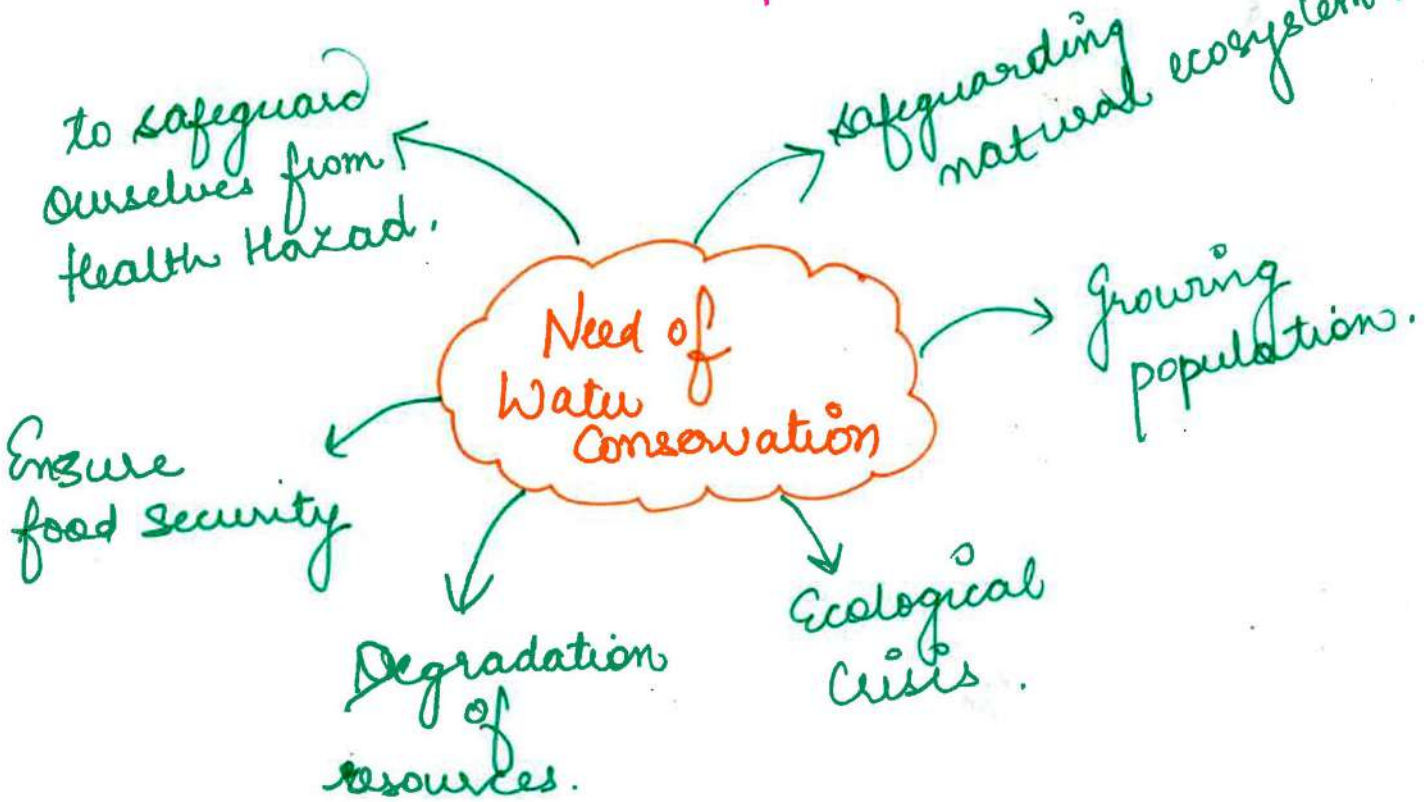
More population ↑ → More Activities ↑ → led to Bad Quality of water. ↑ → Polluted due to Domestic waste, pesticides etc.

Urbanization & Industrialization

Housing societies having their own ground water pumping device.

Heavy use of water + Power Consumption [Hydro electricity]

22% of electricity required is produce by Hydroelectric plant.



Multipurpose River Project & Integrated Water Resource Management.

HISTORICAL RECORDS

First Century BC, Sringaverapura had sophisticated water harvesting system channelling flood water of River Ganga.

→ Dams, lake & irrigation system were extensively built during Chandragupta Maurya.

Evidence of irrigation work have found at Kalinga (Orissa), Bennur & Kolhapur.

→ In 11th Century, Bhopal lake declared as largest artifical lake.

In 14th Century, tank in Hauz Khas was Constructed by Ututmish for supply of water in Siri fort Area.

DAM ??

** Also Called As Temple of Modern India **

→ It is a barrier across flowing water that obstruct, direct or retard the flow & creates a reservoir lake.

Based on Height

- Small
- large

Based on Structure

- eg Timber dam.

WHY MPP?

- Irrigation
- Flood Control
- Electricity generation
- Recreation
- Fish Breeding

Opposition of MPP

GEOGRAPHY

- Regulating River Affects
- Excessive Sedimentation
- Rockier Stream beds.
- poor habitat for aquatic life.
- Submergence of vegetation & soil.

SOCIAL

- large Displacement
- Changing Crop pattern.
- Salination of Soil
- Andolan eg Narmada Bachao & Tehri Dam.

RAIN WATER HARVESTING

* Economically & Environmentally Viable Alternative against MPP.
* Variation in Water Harvesting System, keeping local ecological condition & their water needs in mind.

(1) Gul & Kuls
- Mountains & western Himalaya region
- Mainly hill tops

(2) Khadin & Johads
- Jaisalmer & Rajasthan area
- arid agricultural field Converted into rain fed Storage Structure.

(3) Bamboo drip Irrigation System → usage of Bamboo pipe
- Meghalaya
- 200 yr old region.

(4) Rooftop Rain harvesting System
- Called as Tanka System.
- area of Bikaner.
- through water pipes, water is transported to tanks.

(5) Gendathur Model
- Mysore, Karnataka
- 1000mm annual precipitation with 80% collection efficiency & 5000 litre collected annually.

FACT
↳ Tamil Nadu is first state having legal provision of Rooftop harvesting.