**Chapter - 3**

**Water Resources**

**Water**

* 97.5% of water on Earth exists in oceans and seas.
* About 2.5% of total water is available as freshwater.
* 70% of total freshwater is present as frozen ice in icebergs and glaciers.
* A little less than 30% of total freshwater is stored as groundwater.

**Reasons for Water Scarcity**

* Overexploitation
* Excessive use
* Unequal access
* A large population
* Large scale farming
* Large scale deforestation has disturbed the natural recharge of groundwater
* Construction of concrete buildings, factories and roads has also made the ground less impervious to rainwater. This has almost totally stopped the percolation of rainwater to recharge groundwater.
* Excess use of chemical fertilisers and insecticides has contaminated groundwater at many places.
* The contamination is at such a high level that water has become unfit for human consumption.
* Sewage and effluents are being discharged into rivers and ponds; without being treated. This has turned most of the rivers into filthy drains.

**Water Resource Management**

* India had a long tradition of building various structures to manage water resources.
* Irrigation systems were built as early as during the Mauryan Empire.

**Advantages of Multi – Purpose River Valley Project**

* At present, many multipurpose dam projects had been built in India.
* These dams serve many purposes.
* Prevent flood by checking the flow of water.
* Dams is used through a system of canals to irrigate far flung areas.
* Dams are also used for electricity generation.
* Moreover, drinking water is also supplied from the dams.

**Disadvantages of Multi - Purpose River Valley Project**

* Dams have caused a lot of people being displaced from their ancestral lands.
* A vast tract of land gets submerged in the catchment area of dam.
* This results in large scale environmental consequences.
* Due to these reasons, many movement groups have begun protesting against building of large dams.
* Narmada Bachao Andolan is an example of one such movement.
* Interstate disputes.
* Sedimentation

## Rainwater Harvesting

* Most of the rainwater just flows off without percolating down the ground.
* This can be prevented by using rainwater harvesting.
* Rainwater can be collected for future use or can be channelized to recharge groundwater.
* Roof top harvesting - Mysore – Karanataka
* Guls Or kuls – Western Himalayas
* Inundation canals – flood plains of Bengal
* Khadins – Jaisalmer (Rajasthan) and Johads –Rajasthan Tankas – Rajasthan (Bikaner, Phalodi and Barmer )
* Bamboo drip irrigation – Meghalaya