

Sustainable Management of Natural Resources

Natural resources

- Natural resources are the natural substances provided by nature that are considered economically important.
- Soil, water, air, wildlife, forests, coal and petroleum are examples of natural resources.

Need to manage natural resources

- A majority of natural resources is limited and human population is rapidly increasing.
- Utilization of natural resources is increasing at an exponential rate
- Need to conserve resources for future generations
- Equal distribution of resources for equal benefit
- Need to reduce the damage caused to the environment because of the over-exploitation and utilization of resources
- Waste generated from the utilization of these resources is to be safely disposed

3R principle to save environment

- **Reduce**
 - It refers to the reduction in the consumption of resources.
 - For example - Repairing taps to check water leakages
- **Recycle**
 - It means to synthesise or extract useful materials from wastes.
 - For example - Plastic, paper, glass, and metals can be extracted from the waste scrap
- **Reuse**
 - It means using a product again and again.
 - For example - Plastic bottles containing jams can be used to store pulses in the kitchen

Some important treaties signed for the conservation of nature and natural resources and put a check on pollution are, Kyoto protocol, Montreal protocol, Rio Earth summit.

- Forests are biodiversity hotspots as they are homes to large number of plants, animals, and microbes.
- **Stakeholders in forest resources**
 - The tribal people living inside and around forests depend on forest resources

- Traditional people played important role in the past in protecting forests. For example - Amrita Devi Bishnoi sacrificed her life along with 363 other people in 1731 to protect 'Khjiri' trees from being cut down in Khejrali village near Jodhpur.
- **Products of forests**
 - Fire wood
 - Lumber
 - Lac
 - Herbs
 - Honey
 - Fruits
- **The forest department of the government**
 - Owns the land and controls forest resources
 - Forest department ignores local knowledge and traditional management practices of the forest
 - Vast tracts of the forest is converted into plantations of teak, pine, and eucalyptus, which supports little biodiversity.
- **The industrialists**
 - Use forest resources in unsustainable manner
 - Power lobby which pushes the government, ignoring the local people, for the use of forest resources
- **The wildlife enthusiasts**
 - Not dependent on forests
 - Considerable say in forest conservation
- **Sustainable Management**
 - Interests of all the stakeholders should be given a proper say.
 - Benefits of development should reach each and every individual and all generations.
- **Water resources**
 - Basic need of life
 - Most of the Indian agriculture is dependent on monsoons
 - Local people have adopted traditional methods to conserve water
- **Traditional water-harvesting systems**
 - Khadins and nadis in Rajasthan
 - Bandharas and tals in Maharashtra
 - Bundhis in Madhya Pradesh and Uttar Pradesh
 - Ahars and Pynes in Bihar
 - Kulhs in Himachal Pradesh
 - Ponds in Jammu
 - Eris in Tamil Nadu
 - Surangamo in Kerala
 - Kattas in Karnataka

- Traditional water-harvesting structures use crescent-shaped earthen embankments or low-strait check dams, built across seasonal flooded gullies, for storing monsoon water and allowing it to seep into the ground.
- After the arrival of Britishers, large dams and canal system were introduced for irrigation purposes.
- Although canal system has benefits, it causes inequitable distribution of resources.
- Major river-valley projects like Sardar Sarover Dam on Narmada has resulted in social crises due to relocation of large number of people and has also resulted in environmental degradation.