

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.