

# **MANAGEMENT OF NATURAL RESOURCES**

**CLASS X**

# Natural Resources

## Natural Resources

Resources available in a nature like air, water, sunlight, soil, minerals, forests, wild life



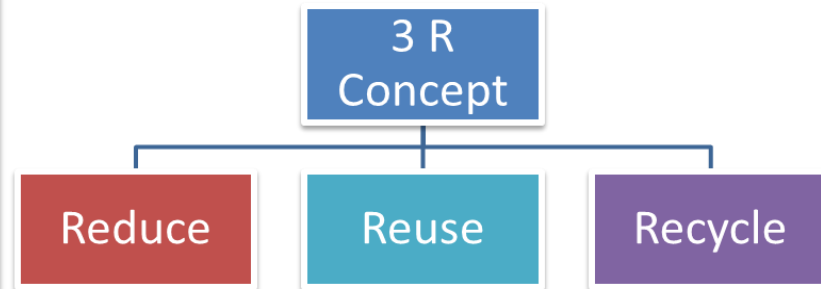
## Non-renewable natural resources

Resources which cannot be replenished in a short period of time like minerals (coal, petroleum, natural gas, metals)

## Renewable natural resources

Resources which can be replenished in a short period of time like air, water, sunlight, forests

## 3 R's to save Environment





## Water Pollution

- 1 Untreated sewage & human excreta
- 2 Industrial waste
- 3 bathing, washing & dropping the ashes of cremated.



## INDICATORS OF WATER POLLUTION

### Coliform bacteria

Coliform is a group of bacteria, found in human intestines, whose presence in water indicates contamination by disease-causing microorganisms.

### Checking pH

Checking of pH used to quantify pollution or the quality of the water used for various activities



## GANGA ACTION PLAN

The Ganga Action Plan was a program launched in 1985 in order to reduce the pollution load on the river.

(see Fig. 16.1). Coliform is a group of bacteria, found in human intestines, whose presence in water indicates contamination by disease-causing microorganisms.

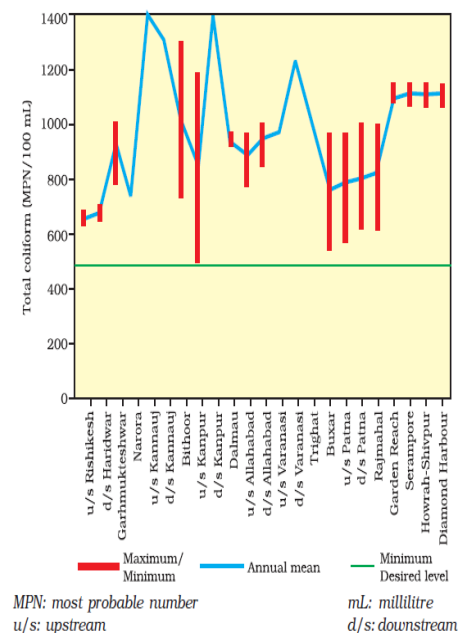


Figure 16.1 Total coliform count levels in the Ganga (1993-1994)

# Water as Natural Resource

Water is a basic necessity to all terrestrial life forms.

Water availability is less because of urban waste, diversion for high water demanding crops etc.

Irrigation methods like dams, tanks, canals are used to meet the requirements of agriculture and daily needs.

Management of water resources

- Integrated watershed plan
- Flood control
- Rainharvesting & recharging of ground water through traditional methods

## Advantages of Dams

- Regular and round the year water supply to nearby human settlements
- Irrigation
- generation of electricity.



1. Sardar Sarovar dam : River Narmada
2. Tehri dam : River Ganga
3. Tawa Dam

## Disadvantages of constructing Dams

1. Social problems : Displacement of people
2. Environmental Problems: deforestation and loss of biodiversity
3. Economic Problems : consumption of huge public money

# WATER HARVESTING

**Capturing of  
rain water or  
run off for  
reuse**

- **Ground  
water  
harvesting**
- **Rooftop  
rainwater  
harvesting**

## Advantages of ground water

**Does not  
evaporate**

**To recharge wells  
and provides  
moisture for crops**

**Does not promote  
breeding of  
mosquitoes (unlike  
stagnant water**

**Protected from  
contamination**

## Technique

**Capturing runoff  
from roof tops**

**Capturing runoff  
from local  
catchment**

**Capturing flood  
water from local  
streams**

# WATERSHED MANAGEMENT

Scientific conservation of soil & water to increase biomass production

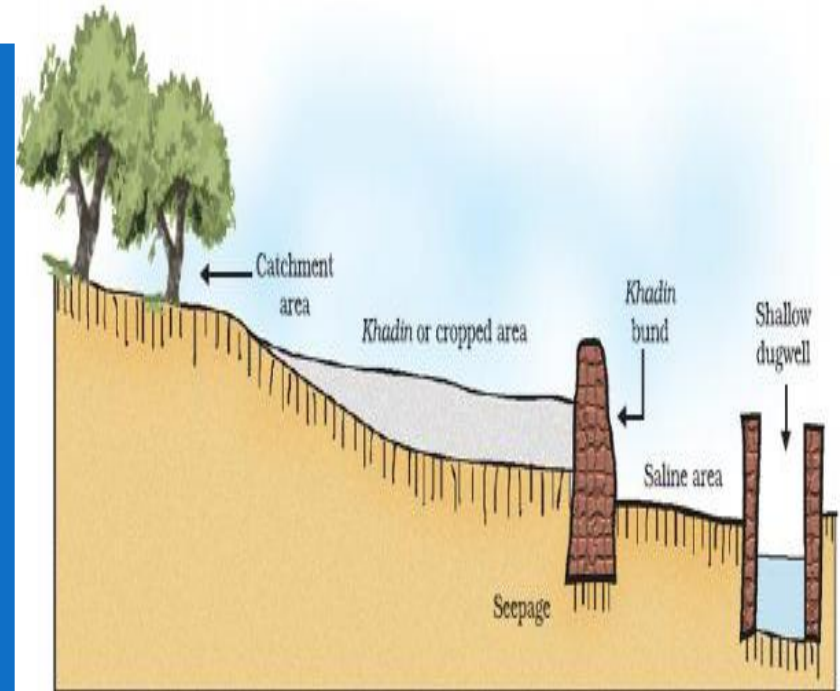
**Increase income of watershed community**

**Overcome drought and flood**

**Increase life of downstream dams and reservoirs**

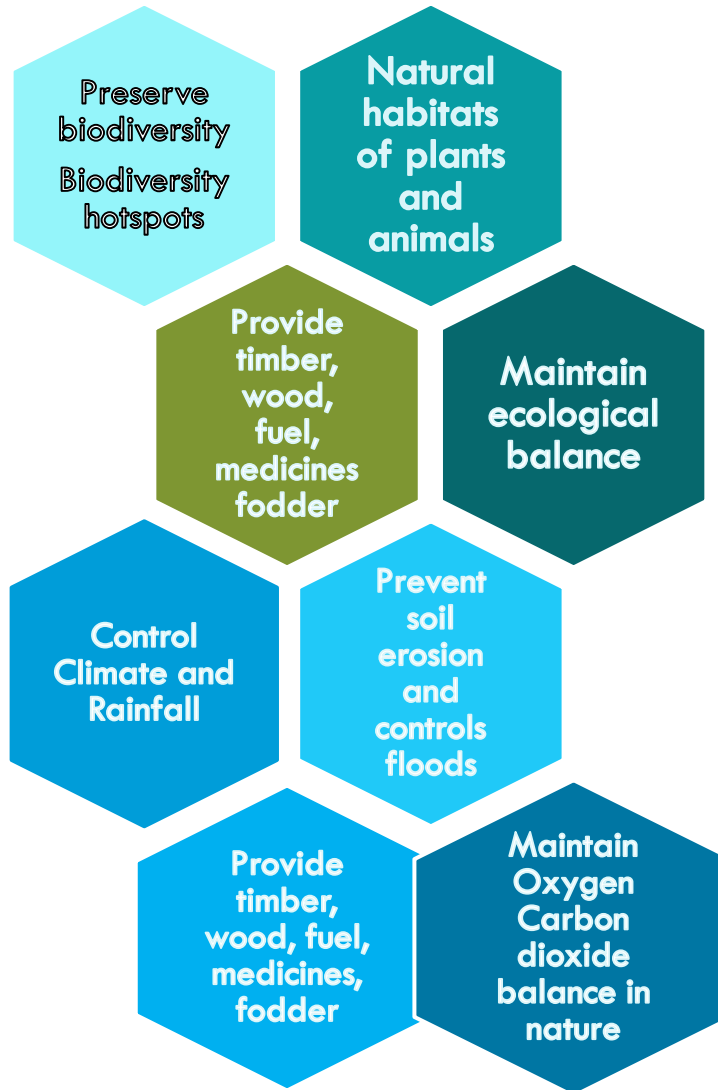
## **Traditional water Harvesting structures**

- **Khadins, Tanks and Nadis in Rajasthan**
- **Bandharas and Tals in Maharashtra**
- **Bundhis in M.P. and U.P.**
- **Kulhs in Himachal Pradesh**
- **Ponds in Jammu**
- **Eris (Tanks) in Tamil Nadu**
- **Surangams In Kerala**
- **Kattas in Karnataka**



**Khadin -Traditional water Harvesting structures**

# Importance of Forests



## Causes of Damage to forests:

- ❑ By local people to fulfil their daily needs
- ❑ Deforestation for industrial needs
- ❑ Deforestation for development projects like dams and roads

## Stake holders of forests

People who are associated with forests directly or indirectly

The person who live in and around forest

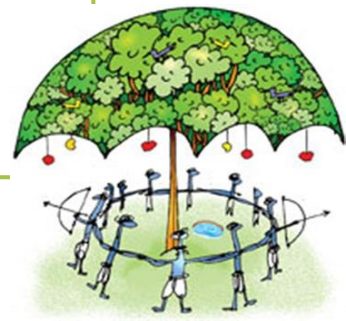
The forest department

The industrialists

The forest and wildlife activists

## Conservation of forests

- Afforestation
- Preventing or reducing deforestation.
- Preventing over grazing by cattle.
- Agroforestry
- By setting up wildlife sanctuaries, national parks, biosphere reserves
- Undertaking social forestry programs for benefit of rural & tribal community



# Efforts made to protect forest

## Participation of local people in the management of forest

### CASE 1

- The case of khejri trees  
There is a Bishnoi community in Rajasthan for whom conservation of forest and wildlife has been a religious belief.
- In 1973, Amrita Devi Bishnoi led a group of 363 person who sacrificed their lives for the protection of khejri trees in khejrli village near Jodhpur in Rajasthan.

### CASE 2

#### Chipko movement

Chipko movement started in the early 1970s in the Garhwal Himalayas of Uttarakhand.

A group of peasant women in Reni village, acted to prevent the cutting of trees and reclaim their traditional forest rights that were threatened by the contractor system of the state Forest



### CASE 3

- Help in increasing forest produce as well as in their conservation .
- In return the villagers are given employment in both silviculture and harvesting in forest , 25% of the final harvest produce , and were allowed to collect firewood and fodder from the forest area on a nominal payment .

# Wildlife

## Importance of wildlife

- Wildlife helps to preserve biodiversity.
- Wildlife helps to maintain food chains and food web.
- Useful products from wildlife like food, medicines, leather, honey, lac

## Conservation of wildlife

- Preserving the natural habitats of animals.
- Banning poaching of animals.
- Protecting endangered species of animals.
- Setting up of wildlife sanctuaries, national parks, biosphere reserves etc.



# Fossil Fuel

Obtained from the remains of plants & animals buried million of years ago

## Fossil Fuel

```
graph TD; FF[Fossil Fuel] --> C[COAL]; FF --> P[PETROLEUM]; FF --> NG[NATURAL GAS];
```

### COAL

Mainly carbon and its compounds formed from degradation of biomass million years ago

### PETROLEUM

Complex mixture of solid, liquid & gaseous hydrocarbons formed by decay of small marine animals & plants buried million of years ago

### NATURAL GAS

Cleaner fuel

- **Need to use fossil fuel judiciously**
- **Extensive use is causing global warming**