Lesson 2 Land, Soil, Water Natural Vegetation and wildlife resources

Land resources - 30% to total area of earth surface area (part of it is not habitable or uninhabitable)

- Uneven distribution of population – reason - varied characteristics of land and climate.
- various parts have different uses: Mountains, Plains, desert area etc)

Land use – agriculture, forestry, mining, building house, roads and industries.

- Land use is determined by various factor:
- Physical Factor: topography, soil, climate, minerals, etc.
- Human factors: population and Technology
    - Private land and community land (common property resources)
- Increase in population leads to increase in demand of land use but land is limited.

Threats to environment – land degradation, landslides, soil erosion, desertification.

Conservation of Land Resources

land degradation can be checked by following methods:
i) afforestation
ii) land reclamation
iii) regulated use of chemical pesticide and fertilisers
iv) check on overgrazing

- Landslides: Mass movement of Rock, debris or the earth down a slope
  Causes – earthquakes, floods, volcanoes, mining, deforestation etc.
  Impact: loss of life and property , flood etc.
  Mitigation mechanism:
  i) Hazard mapping-identifying area and avoiding it
  ii) Construction of retention wall
  ii) Increase in the vegetation
  iv) Surface drainage control work

Soil resources -

-The thin layer of rainy substance covering the surface of the earth is called soil.
-It is made up of organic matter, minerals and weathered rocks. The right mix of minerals and organic matter gives fertile soil.

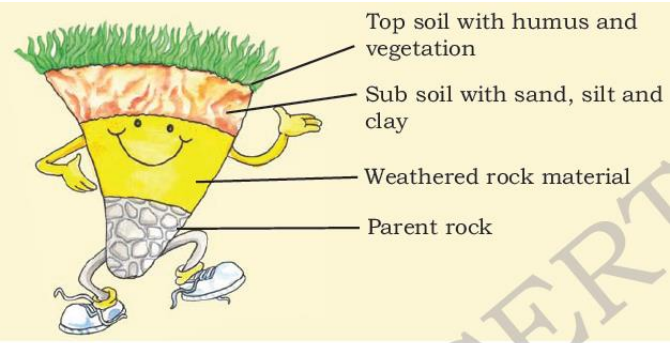


Fig. 2.3: Soil Profile

- Weathering : the breaking up and decay of exposed rocks, by temperature changes, frost action, plants, animals and human activity.

Factors of soil formation

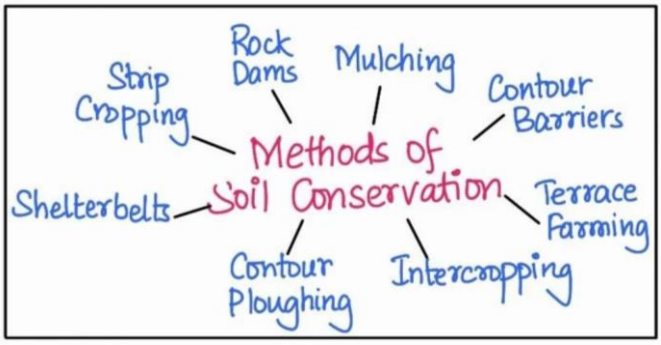
parent rocks : determines colour, texture, chemical properties, mineral, permeability
climate: temperature, rainfall influence rate of weathering and humus
relief : altitude and slope determined accumulation of soil

Flora, Fauna and Micro organism : affect humus formation.
Time : thickness of soil.

Degradation of soil and conservation measures

factors responsible for degradation of soil are : deforestation, overgrazing, overuse of chemical fertilizers or pesticides, rain wash, landslides, floods.

- Methods of soil conservation are mulching counter barriers intercropping terrace farming counter ploughing shelterbelts



Water resources

- three fourth of earth is covered with water (water planet)
-fresh water accounts for 2.7 % only (70% glaciers and ice sheets)
- supports rich variety of plants and animals
-it is renewable resource and is renewed through water cycle

- use of water – drinking , washing, agricultural Industries, generating electricity

-Challenges to water availability : rising demand, urbanisation, increasing population (food)

Problems of water availability :

- scarcity of water in many regions of the world
- Africa, West Asia, South Asia parts of western USA, north west Mexico, parts of south America and entire Australia.
- variation in precipitation.
- over exploitation.
- contamination of water resources.

Conservation of water resources

Cause -Renewable resource- overuse and pollution are great threat
- chemical Industrial effluents, untreated sewage
- Non biodegradable chemical reach human body.

- Conservation of water resources
  - treating effluents
  - forest and vegetation slow the surface of runoff and replenish water
  - rainwater harvesting
  - proper linking of canal to minimise the use of water
  - sprinklers and drip and trinkle irrigation system should be used.

Natural Vegetation and Wildlife

-zone where all the three sphere (Atmosphere, lithosphere, Hydrosphere) interact
- life form exist in this zone. This life supporting system is known as ecosystem.

Importance of vegetation and wildlife

-plants provide us timber, shelter to animals, produce oxygen , storage of groundwater, fruits, latex, turpentine oil, medicine etc.

- wildlife provides us milk, meat, hides, honey and wool, helps in pollination, act as decomposers.
- both (vegetation and wildlife) plays a very important role in balancing ecosystem.
- vultures (scavengers) – dying of kidney failure , as feeding livestock treated with diclofenac(painkiller).

Distribution Of Natural Vegetation

-Major vegetation types of world are :

i) forest -area of heavy rainfall, huge tree may thrive
- Abundant of vegetation and water supply.

ii) Grassland: - decrease in moisture and rainfall
- size and density of trees also decreases .
- decrease in rainfall cause short stunted tree and grasses

iii) Scrubs - dry area of low rainfall, thorny shrubs and scrubs, grow deep roots and waxy leaves.

iv) Tundra- Found in cold polar regions, Mosses and lichens.

Forest
- Evergreen – (Do not shed their leaves.)
- Deciduous - (shed their leaves in a particular season.)

Conservation Of Natural Vegetation and wildlife

-They play very important role in our life

-Cause of problem: changing climate, human interferences

Problems

Loss of natural habitat, Deforestation, Soil erosion, Forest fires, tsunami, landslides, poaching. These are the factors responsible for the extinction and harming of vegetation and wildlife.

- **Conservation of natural vegetation and wildlife**

-Natural Parks Wildlife sanctuaries and biosphere reserves are made.

- conservation of creeks lakes and wetlands
- awareness programs like social forestry and Vanamohatasava should be encouraged.
- legal backing against killing of animals.
- CITES ((The Convention on International Trade in Endangered Species of Wild Fauna and Flora)
  -international agreement between governments.
  -ensures that international trade flora and fauna does not threaten their survival.
  - roughly 5000 of animal species and 28000 of plant species are protected under it.