CBSE : Grade 10
Class - X

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Board: CBSE

RESOURCES AND DEVELOPMENT

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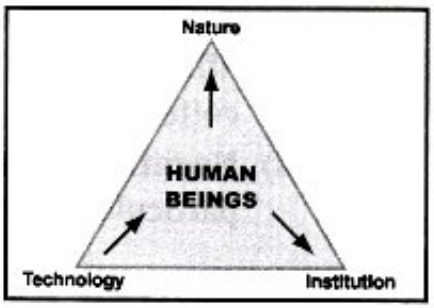
'RESOURCE'→ Technologically accessible, economically feasible and culturally acceptable

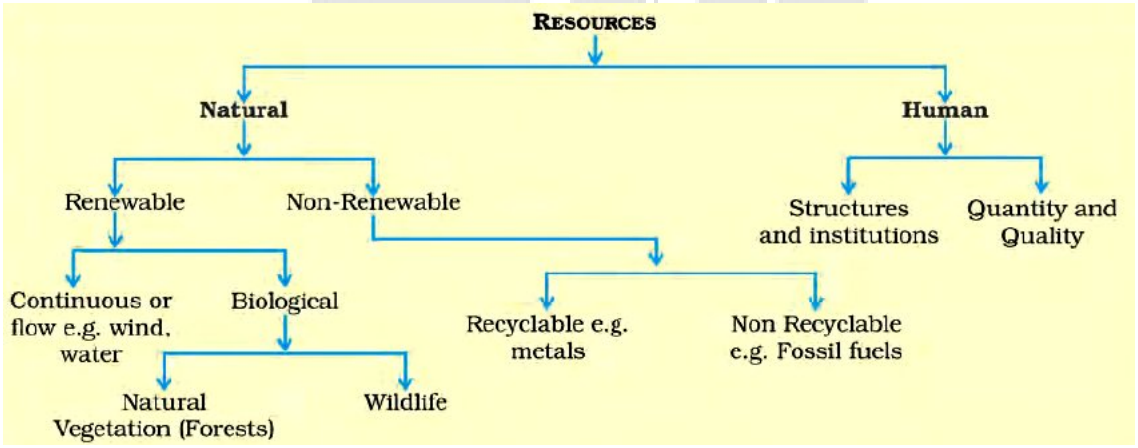


(Fig-1: Interdependent relationship between nature technology and institutions)

Resource Classification -

These resources can be classified in the following ways –

(a) On the basis of origin – biotic and abiotic
(b) On the basis of exhaustibility – renewable and non-renewable
(c) On the basis of ownership – individual, community, national and international
(d) On the basis of status of development – potential, developed stock and reserves



(Fig2: Classification of Resources)

DEVELOPMENT OF RESOURCES -

- Resources are vital for human survival as well as for maintaining the quality of life. But Indiscriminate use of resources led to the following **major problems** →
  - Depletion of resources
  - Accumulation of resources in few hands → divided the society into two segments i.e. haves and have nots or rich and poor
  - Global ecological crises such as, global warming, ozone layer depletion, environmental
  - Pollution and land degradation.

Solutions: →

- An equitable distribution of resources
- Proper resource planning.
- Sustainable development.

Sustainable Development → 'development should take place without damaging the environment, and development in the present should not compromise with the needs of the future generations.

Rio de Janeiro Earth Summit, 1992→Agenda 21→ Sustainable Development

RESOURCE PLANNING -

Planning → Judicious use of resources

Regional Inequality in the distribution of Resources → So there is a need for a balanced resource planning at the national, state, regional and local levels.

Example : Jharkhand, Chhattisgarh and Madhya Pradesh are rich in minerals and coal deposits. Arunachal Pradesh has abundance of water resources but lacks in infrastructural development. The state of Rajasthan is very well endowed with solar and wind energy but lacks in water resources.

Resource Planning in India -

(i) Identification and inventory of resources across the regions of the country → surveying, mapping and qualitative and quantitative estimation and measurement of the resources.

(ii) Evolving a planning structure endowed with appropriate technology, skill and institutional set up for implementing resource development plans.

(iii) Matching the resource development plans with overall national development plans.

Conservation of Resources -

- Gandhiji → "There is enough for everybody's need and not for any body's greed."
- At international level → the Club of Rome advocated resource conservation for the first time in a more systematic way in 1968.
- 1974→ Gandhian philosophy was presented by Schumacher in his book **'Small is Beautiful'**.
- Brundtland Commission Report, 1987→ The seminal contribution with respect to resource conservation at the global level→ introduced the concept of 'Sustainable Development' → published in a book entitled 'Our Common Future'.
- Earth Summit at Rio de Janeiro, Brazil in 1992

LAND RESOURCES -

Land is an asset of a finite magnitude → supports natural vegetation, wild life, human life, economic activities, and transport and communication systems.

Land Distribution in India -

- About 43 per cent of the land area → plain → provides facilities for agriculture and industry.
- About 30 per cent of the total surface area → Mountain→ensure perennial flow of some rivers; provides facilities for tourism and ecological aspects.
- About 27 per cent of the area of the country → the plateau region → rich reserves of minerals, fossil fuels and forests.

LAND UTILISATION -

Land resources are used for the following purposes:

1. **Forests**
2. **Land not available for cultivation -**
   (a) Barren and waste land
   (b) Land put to non-agricultural uses, e.g. buildings, roads, factories, etc.
3. **Other uncultivated land (excluding fallow land) -**
   (a) Permanent pastures and grazing land,
   (b) Land under miscellaneous tree crops groves (not included in net sown area),
   (c) Cultivable waste land (left uncultivated for more than 5 agricultural years).
4. **Fallow lands -**
   (a) Current fallow-(left without cultivation for one or less than one agricultural year),
   (b) Other than current fallow-(left uncultivated for the past 1 to 5 agricultural years).
5. **Net sown area the physical extent of land on which crops are sown harvested is known as net sown area. Area sown more than once in an agricultural year plus net sown area is known as gross cropped area.**

LAND USE PATTERN IN INDIA -

- Total geographical area of India → **3.28 million sq km**.
- Land use data available → Only for **93 percent** of the total geographical area (because the lands use reporting for most of the north-east states except Assam have not been done fully.
- Some areas of Jammu and Kashmir occupied by Pakistan and China have also not been surveyed.
- The pattern of net sown area → varies greatly from one state to another → Over **80 percent** of the total area in Punjab and Haryana → and less than 10 per cent in Arunachal Pradesh, Mizoram, Manipur and Andaman Nicobar Islands.
- Forest area in the country → Forest cover far lower than the desired **33 percent** of geographical area as per the **National Forest Policy (1952)**

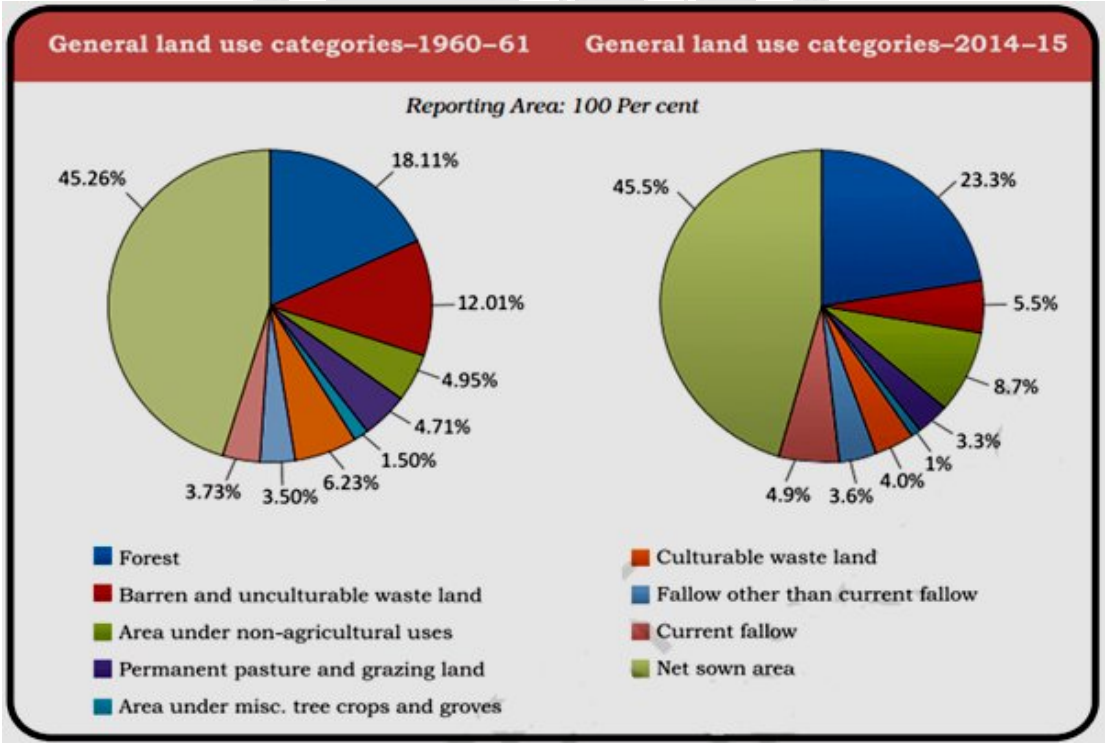


Fig-3(Source: Directorate of Economics and Statistics, Ministry of Agriculture, 2017)

LAND DEGRADATION AND CONSERVATION MEASURES -

- **95 percent** of our basic needs for food, shelter and clothing are obtained from land.
- Human activities → degradation of land & aggravated the pace of natural forces to cause damage to land.
- India → About 130 million hectares of degraded land
- **28 percent** → forest degraded area
- **56 percent** → water eroded area and the rest is affected by saline and alkaline deposits.

Causes of Land degradation -

- Jharkhand, Chhattisgarh, Madhya Pradesh and Odisha → mining
- Gujarat, Rajasthan, Madhya Pradesh and Maharashtra → overgrazing
- Punjab, Haryana, western Uttar Pradesh → over irrigation

Ways to solve the problems of land degradation →

- Afforestation
- Planting of shelter belts of plants
- Control on over grazing
- Stabilisation of sand dunes by growing thorny bushes

SOIL AS A RESOURCE -

- Most important renewable natural resource
- Various forces of nature → change in temperature, actions of running water, wind and glaciers, activities of decomposers etc. → contribute to the formation of soil.

Classification of Soil :-

Alluvial Soils:

- Most widely spread and important soil.
- Consists of various proportions of sand, silt and clay
- Very fertile → Adequate proportion of potash, phosphoric acid and lime → ideal for the growth of sugarcane, paddy, wheat and other cereal and pulse crops.
- Soils in the drier areas → more alkaline and can be productive after proper treatment and irrigation.
- Entire Northern Plains → deposited by three important Himalayan river systems– the Indus, the Ganga and the Brahmaputra.
- Also extend in Rajasthan and Gujarat through a narrow corridor
- Eastern coastal plains particularly in the deltas of the Mahanadi, the Godavari, the Krishna and the Kaveri rivers.
- Soils are more common in piedmont plains such as Duars, Chos and Terai.

On the basis of their age →

- **Bangar** → Old alluvial, higher concentration of kanker nodules
- **Khadar** → New alluvial, more fine particles

Black Soil -

- Known as regur soils
- Suitable for cotton
- Deccan trap (Basalt) region spread over northwest Deccan plateau and is made up of lava flows.
- Maharashtra, Saurashtra, Malwa, Madhya Pradesh and Chhattisgarh and extend in the south east direction along the Godavari and the Krishna valleys.

- Extremely fine i.e. clayey material
- Capacity to hold moisture.
- Rich in soil nutrients, such as calcium carbonate, magnesium, potash and lime
- Poor in phosphoric contents
- Deep cracks in hot weather & sticky when wet

Red and Yellow Soils -

- Develops on crystalline igneous rocks in areas of low rainfall in the eastern and southern parts of the Deccan plateau
- Found in parts of Odisha, Chhattisgarh, southern parts of the middle Ganga plain and along the piedmont zone of the Western Ghats
- Reddish colour due to diffusion of iron in crystalline and metamorphic rocks
- Yellow when it occurs in a hydrated form

Laterite Soil -

- Derived from the Latin word 'later' which means brick
- Develops in areas with high temperature and heavy rainfall
- Result of intense leaching due to rain
- Humus content low (due to most of the microorganisms, particularly the decomposers, like bacteria, get destroyed due to high temperature)
- Suitable for cultivation with adequate doses of manures and fertilizers.
- Found in Karnataka, Kerala, Tamil Nadu, Madhya Pradesh, and the hilly areas of Odisha and Assam
- Hilly areas of Karnataka, Kerala and Tamil Nadu, → tea and coffee.
- Tamil Nadu, Andhra Pradesh and Kerala → cashew nut

Arid Soils -

- From red to brown in colour
- Sandy in texture and saline in nature
- In some areas the salt content is very high and common salt is obtained by evaporating the water.
- Dry climate, high temperature → faster evaporation→ lacks humus and moisture.
- Lower horizons of the soil are occupied by Kankar
- Becomes cultivable in case of western Rajasthan

Forest Soils -

- Hilly and mountainous areas where sufficient rain forests are available
- Loam and silt in valley side and coarse grain in upper side
- In the snow covered areas → Acidic with low humus content
- Lower parts of the valleys and alluvial fans → fertile

Soil Erosion -

- Denudation of the soil cover and subsequent washing down → soil erosion

Factors →

- Deforestation
- Over-grazing
- Construction and Mining

- Running water running water cuts through the clayey soils and makes deep channels → **gullies**
- Land unfit for cultivation → Badlands → in Chambal such lands are called **ravines**
- Top soil is washed away- **Sheet erosion**

Soil Conservation -

- Contour Ploughing-decrease flow along contour lines
- Terrace cultivation-restrict erosion (western and central Himalayas)
- Strip cropping-large fields to strips
- Shelter belts rows of trees-stabilize sand dunes

STATE OF INDIA'S ENVIRONMENT: A CASE STUDY -

- People's management-Sukhomanjari village and Jhabua → Tree density in Sukhomajri increased from 13 per hectare in 1976 to 1,272 per hectare in 1992
- People being made the decision-makers by the Madhya Pradesh government → 2.9 million hectares or about 1 per cent of India's land area, are being greened across the state through watershed management.