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RESOURCES AND DEVELOPMENT

Meaning of Resources

»» Everything available in our environment which can be used to satisfy our needs, provided, they are:

- Technologically accessible
- Economically feasible
- Culturally acceptable

Classification of resources

(TB - Fig 1.2)

Human beings: (Fig 1.1)

1. Interact with nature through technology
2. Create institutions
3. Accelerate economic development

Resources can be classified in four (4) ways:

1. Basis of origin -
   - biotic
   - abiotic
2. Basis of exhaustibility -
   - Renewable
   - Non-renewable
3. Basis of ownership -
   - Individual
   - Community
   - National
   - International

4. Basis of status of development -
- Potential
- Developed stock
- Reserves

DEVELOPMENT OF RESOURCES

» Resources, being "free gifts of nature", are used indiscriminately by humans, leading to major problems.

» Problems: IMP
- Depletion of resources
- Accumulation of resources in few hands
- Indiscriminate exploitation of resources

Sustainable Development

» Development should take place without damaging the environment.

» Development in the present should not compromise with the needs of the future generations.

» This can be achieved through proper planning.

(Brazil) Rio de Janeiro Earth Summit, 1992

» 14 June 1992 - More than 100 leaders met.

» First International Earth Summit

» Leaders signed the Declaration on Global Climate Change and Biological Diversity.

» Endorsed Forest Principals and adopted Agenda 21.

Agenda 21

» Declaration signed by world leaders in 1992 at the UNCED (United Nations Conference on Environment and Development)

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» Aim – Achieving global sustainable development
» Objective – To combat environmental damage, poverty, disease, etc.
» Major objective – Every local government should draw its own local Agenda 21.

RESOURCE PLANNING

» Strategy for judicias use of resources.
» Some regions are sufficient in ~~good~~ some resources but deficient in others.

States	Advantage	Deficiency
Jharkhand Chhattisgarh Madhya Pradesh	Minerals and coals	Infrastructural development
Arunachal Pradesh	Water resource	Infrastructural development
Rajasthan	Solar and wind energy	Water resource
Ladakh	Cultural Heritage	Water, Infrastructure, Minerals

Steps of Resource planning

1. Identification and inventory of resources across the regions of the country.
   » Includes:
   - Surveying
   - Mapping
   - Qualitive and quantitative estimation and measurment

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

3. Matching the resource development plans with overall national development plans

Importance of Resource Planning

>>> Resource Planning refers to the strategy for planned and judicious utilization of resources.

>>> Resource Planning helps to:

1. Identify various resources present in different regions of the country
2. Conserve various non-renewable / extinguishable resources
3. Reduce wastage of resources
4. Equitable distribution of resources among the regions that have acute shortage.
5. Keep track of remaining resources
6. Take care of future generations

Conservation of Resources

Activity:

1. Irrational consumption
2. Over-utilization

Consequence:

1. Socio-economic problems
2. Environmental problems

To overcome these problems, conservation of resources is vital.

Gandhi ji – "There is enough for everybody's need and not for any body's greed."

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Steps Taken at International level for Resource Conservation

1968 : Club of Rome advocated Resource Conservation for the first time

1974 Gandhian philosophy was again presented by Schumacher in book "Small is Beautiful."

1987 .. Brundland Commission Report on 'Sustainable Development'.
The commision then published a book named "Our Common Future".

1992 . Earth Summit at Rio de Janeiro, Brazil.

Land Resources

» Land supports natural vegetation, wild life, human life, economic activities, transport and communication systems.

Relief Feature	Land %	Advantage
Plains	43%	Facilities for agriculture and industry
Mountains	30%	Ensures perennial flow of some rivers Facilities for tourism and ecological aspects
Plateau	27%	Rich reserves of minerals, fossil fuels and forests

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Land ~~utili~~ utilization

»» Land is used for:

1. Forests
2. Land not available for cultivation
   (a) Barren and waste land
   (b) Land put to non-agricultural uses (eg: buildings, roads, factories, etc.)
3. Other uncultivated land
   (a) Permanent pastures and grazing land
   (b) Land under miscellaneous tree crops (not included in net sown area)
   (c) Cultivable waste land (uncultivable for 5+ agro. years)
4. Fallow lands (uncultivated)
   (a) Current fallow - left without cultivation for one or less agro. years → 0-1 yrs
   (b) Other than current fallow - uncultivated for 1-5 agro. years → 1-5 yrs
   Cultivable → 5+ yrs (agricultural years)
5. Net Sown Area
   »» Area cultivated once in one agro. year
   OR (definition)
   »» Physical extent of land on which crops are sown and harvested (once)

Gross cropped Area
»» Area sown more than once in one agro. year plus net sown area.

Land Use Pattern In India

»» Land Use is determined by:
1. Physical factors - topography, climate, soil types

2. Human factors – Population density, technological capability and, culture and traditions

- India's geographical area – 3.28 million sq. km
- Land use data available for only 93% of the total area:
  - Land reports for north-eastern states (except Assam) has not been done fully
  - Areas of J&K occupied by Pak. and China are not surveyed
- Land under permanent pasture has decreased
- Other than current fallow lands:
  - poor quality
  - high cultivation costs

  } cultivated 1-2 times in 2-3 years

↓

- Including these, India's net sown area (NSA) is 54% of the reporting area.

NSA	States
Over 80%	Punjab, Haryana
Less than 10%	Arunachal Pradesh, Mizoram, Manipur, Andaman & Nicobar Islands

Other lands

1. Forests – Less than desired 33% [National Forest Policy]
2. Waste lands – rocky, arid and desert areas
3. Non-agricultural uses – settlements, roads, railways and industries.

- Continuous use of land for long time without taking measures to conserve it has led to land degradation.

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Causes of Land Degradation

1. Overgrazing
2. Soil erosion
3. Deforestation
4. Mining
5. Urbanization
6. Water Blockage
7. Chemical Fertilizers
8. Industrialization
9. Constructions
10.

Causes	Area
Mining and quarrying	Jharkhand, Chhattisgarh, Madhy Pradesh, Odisha
Water logging due to over-irrigation causing increase in salinity and alkalinity	Punjab, Haryana, western Uttar Pradesh
Over grazing	Gujarat, Rajasthan, Madhya Pradesh, Maharashtra, and hilly states of North India
Industrialization causing retardation of water infiltration into the soil	In pockets all over India

Land Conservation Measures

1. Afforestation and proper management of grazing
2. Planting of shelterbelts of plants
3. Control on overgrazing
4. Stabilization of sand dunes by growing thorny bushes

} arid areas

5. Proper mangement of waste lands
6. Control of mining activities
7. Proper discharge and disposal of industrial affluents and wastes after treatment

→ Industrial and suburban areas

HYDERABAD FOREST CLEARANCE

1. What happened?
   - Around 400 acres of forest in Kancha Gachibowli, near the University of Hyderabad, were cleared starting March 30, 2025.
   - Over 50 bulldozers were used for the large-scale removal

2. Why was it done?
   - The Telangana Government aimed to auction the land for industrial and IT park development.
   - Officials argue that the land is not officially classified as forest, despite its dense greenery.

3. What are the impacts?
   - Over 455 species of flora and fauna affected.
   - Increased air pollution, groundwater depletion and soil erosion, along with high temperatures, reduced rainfall and worsening air quality may soon become noticeable.

4. Who opposed it and what was done?
   - University of Hyderabad students, environmentalists and activists protested against the deforestation.
   - The Supreme Court ordered immediate halt and demanded a report.
   - Environmental groups from Mumbai and other cities joined the movement.

5. What conservation efforts are needed?

- Reforestation programmies should be initiated to restore lost green cover.
- Strict environmental laws must be enforced to prevent unchecked deforestation.
- Sustainable development policies should balance urban growth with nature conservation.

Soil As A Resource

- Most important renewable resource.
  - medium of plant growth
  - supports different types of living organisms
- Factors for soil formation:
  1. Relief
  2. Parent rock or bed rock
  3. Climate
  4. Vegetation
  5. Other forms of life
- Forces of nature that contribute to soil formation:
  1. Change in temperature
  2. Actions of running water
  3. Wind and glaciers
  4. Activities of decomposers, etc.

Classification of Soils

Alluvial soils

- Most widely spread and important

Classification of soils

1. Alluvial soils
2. Black soil
3. Red and Yellow Soils
4. Laterite Soil
5. Arid Soils
6. Forest Soils

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Soil	States	Soil Texture	Deficient	Crops	Special Feature
Alluvial	Punjab, Bihar, Uttar Pradesh, Haryana, etc.	Sandy, loam to clay	Nitrogen, Phosphorus, organic matter	Sugarcane, paddy, wheat, cereal, etc.	Highly Fertile
Black	Gujarat, MP, Maharashtra, Chhattisgarh	Clayey material	Humus, Nitrogen, Potassium	Cotton, Citrus fruits, tobacco, etc.	Made up of lava flow
Red and Yellow	Odhisha, Chhattisgarh, Southern of the middle Ganga plain	Fine grained, clay to loam	Phosphoric acid, organic material, humus	Cotton, pulses, millets, oilseeds, potato, maize, groundnut, etc.	Formed under well-drained condition
Laterite	Tamil Nadu, Andhra Pradesh, Kerala, MP, etc.	Reddish-brown due to iron oxide	Plant nutrients	Cashew Nuts and Tea plants	The pebbly crust formed due to alteration of wet and dry periods
Arid	Western Rajasthan, Haryana, Punjab	Sandy and saline	Humus and moistures	Barley, wheat, millets	High salt, calcium content
Forest	Himalayas Eastern Ghats and Terai regions	Loamy, silty (valley sides); coarse (upper slopes)	Phosphorus, lime	Spices, teak, apple	Acidic Soil

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