

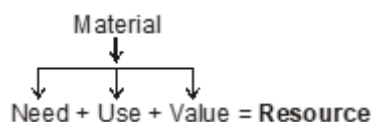


Resource & Development

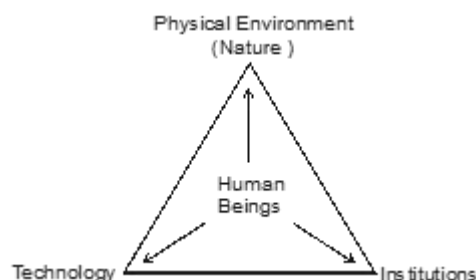
Chapter Outline

- ✧ Resources
- ✧ Classification of Resources
- ✧ Development of Resources
- ✧ Resource Planning
- ✧ Conservation of Resources
- ✧ Land Resources
- ✧ Land use Pattern
- ✧ Land Degradation & Conservation
- ✧ Soil
- ✧ Types of soils
- ✧ Soil Erosion
- ✧ Soil conservation

DEFINITION RESOURCES



Everything available in our environment which can be used to satisfy our needs, provided it is technologically accessible, economically feasible and culturally acceptable can be termed as Resource.



(a) Importance of Resources :

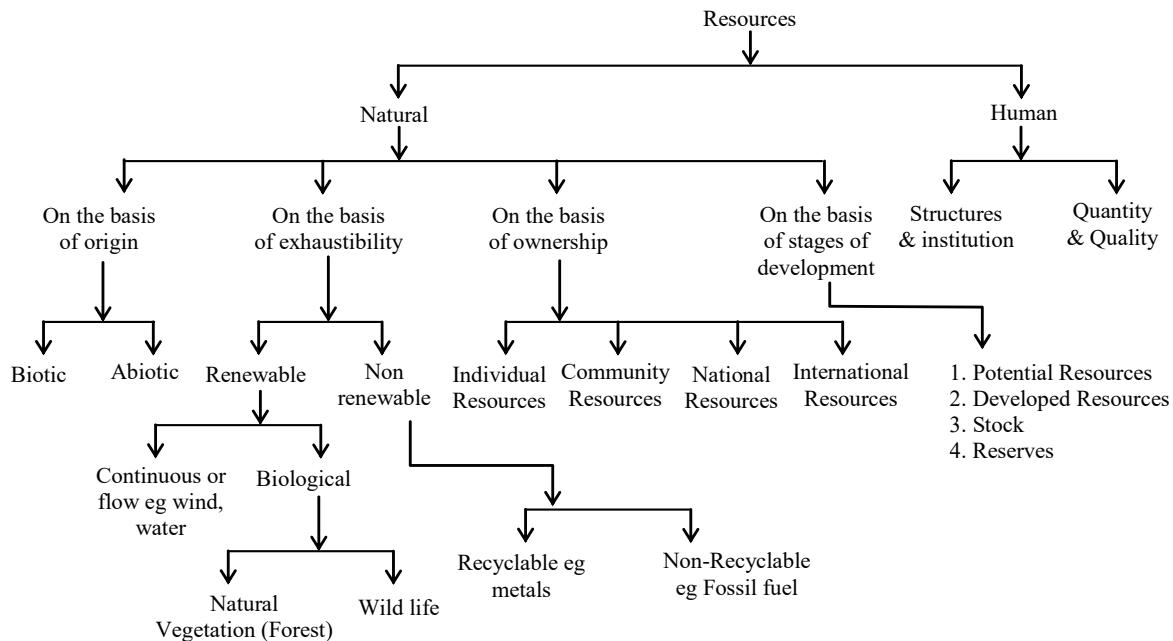
- (i) Resources form the backbone of the economy of the nation.
- (ii) Resources form the base for economic strength & prosperity.
- (iii) By utilising natural resources, humans have created their own world of living.

(b) Characteristics :

- (i) Resources have utility.
- (ii) Resources are normally available in limited quantity.
- (iii) Man has to make efforts to get utility from the resources.
- (iv) Resources help us to create goods or provide services.
- (v) Utility of a resource or its usability changes with improvement in science and technology.



TYPES OF RESOURCES OR CLASSIFICATION OF RESOURCES



Natural Resources :

Natural Resources are all that exists without the actions of humankind. This includes all natural characteristics such as magnetic, gravitational, and electrical properties and forces. On earth we include sunlight, atmosphere, water, land (includes all minerals) along with all vegetation and animal life that naturally subsists upon or within the heretofore identified characteristics and substances.

Human resources:

Human resources is the set of individuals who make up the workforce of an organization, business sector, or economy. "Human capital" is sometimes used synonymously with human resources, although human capital typically refers to a more narrow view (i.e., the knowledge the individuals embody and economic growth). Likewise, other terms sometimes used include "manpower", "talent", "labour", or simply "people".

DEVELOPMENT OF RESOURCES

It is a necessary exercise for the utilization of resource, is not only exploitation but also **preservation & reuse**.

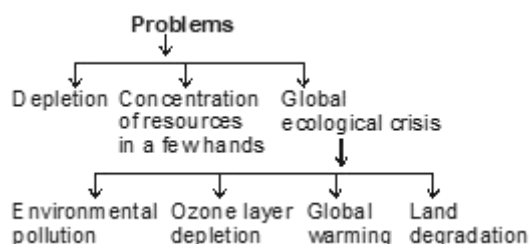
Examples :

- (i) Land has to be cleared of forests or unwanted plants before agriculture.
- (ii) Minerals have to be dug out and smelt before being converted into machinery.
- (iii) Water has to be taken to fields to irrigate lands.

(a) Points to be kept in mind while using the natural resources :

- (i) Renewable resources should not be put to **wrong use or polluted**.
- (ii) Nonrenewable resources should be **used properly** & should be **preserved for the future generation** also.

(b) Over utilization of resources has led to many problems.





1. **Depletion of Resources** : Over utilisation has led to depletion of resources for meeting the greed of few individuals.
2. **Concentration of Resources** : This has divided the society into 'haves' and 'have nots' and rich and poor.
3. **Global Ecological Crisis** : It has led to global ecological crisis such as global warming, depletion of ozone layer, pollution and land degradation.
4. **Sustainable development** : Sustainable economic development means 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 adopted Agenda-21 for achieving sustainable development.

RESOURCE PLANNING

- ◆ **Definition : Resource Planning** - It is a technique or skill of proper or judicious use of resources.
- ◆ **Need for resource planning** :
 1. Most of the resources are limited in supply.
 2. Most of the resources are unevenly distributed over the country.
 3. Over utilisation of resources may lead to pollution of environment.
 4. Planning of resources is also required to become self dependent.
 5. Under utilisation of resources will lead to under development of the economy.
- ◆ **Importance** : Planning is a widely accepted strategy for judicious use of resources. It has importance in a country like India, which has enormous diversity in the availability of resources. There are regions which are rich in certain types of resources but are deficient in some other resources. There are some regions which can be considered self sufficient in terms of the availability of resources and there are some regions which have acute shortage of some vital resources. This calls for balanced resource planning at national, state, regional and local levels.

RESOURCE PLANNING IN INDIA

This involves 3 processes :

1. Identification & Inventory of resources : This includes surveying, mapping, qualitative & quantitative estimation & measurement of resources.
2. Making a plan structure using appropriate technology skill and institutional setup so that all resources developmental plans can be implemented.
3. Matching the resources development plans with the National development plans.

Do you think that mere availability of resource in a particular region can lead to its development?

Availability of resources is a necessary condition for the development of any region, but mere availability of resources in the absence of corresponding changes in technology and institutions may hinder development. There are many regions in our country that are rich in resources but these are included in economically backward regions. On the contrary there are some regions which have a poor resource base but they are economically developed. Resources can contribute to development only when they are accompanied by appropriate technological development and institutional changes.

- ◆ **Conservation of Resources** : Conservation of Natural Resources means judicious and planned use of natural resources so that we can get the maximum possible benefit from these resources over the longest possible period of time.
- ◆ **Need** :
 1. Most of the resources are nonrenewable, once they get exhausted, can never be reused.
 2. Economic development of a nation depends to a great extent on the richness, development and management of the resources.
 3. Inappropriate & reckless utilization of resources can deplete them.
 4. Overexploitation causes damage to the existing environment.



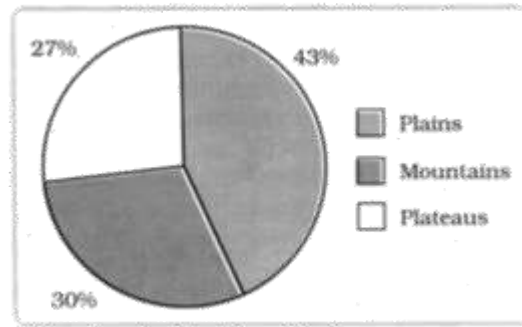
LAND RESOURCES

Land is an important resources because.

1. It supports natural vegetation.
2. It supports wild life & human life.
3. It supports human economic activities and transport and communication system.

India has land under a variety of relief features

- (a) 43 % of plains which is important for agriculture & industries.
- (b) 30 % is mountains. They help to provide rivers facilities for tourism wildlife & ecological aspects.
- (c) 27 % is plateau region which is rich in minerals, fossils fuels & forest.



India : Land under important Relief Features

LAND USE PATTERN IN INDIA

Land use depends upon the following factors :

1. **Physical factors** : It includes topography, climate, soil.
2. **Human factors**: Population density, Technological capability, Culture, Traditions etc.

Net sown area differs greatly from one state to the other. In Punjab & Haryana it is over 80 % and in Arunachal Pradesh, Mizoram, Manipur, Andman and Nicobar island it is less than 10 %. Waste land includes rocky arid and desert area, land

used for housing, roads, railways etc. According to National Forest Policy (1952) 33 %.

LAND DEGRADATION & CONSERVATION MEASURES

◆ Land Degradation :

Refers to the depletion of the land due to faulty agricultural practice, overgrazing, deforestation & mining.

Causes :

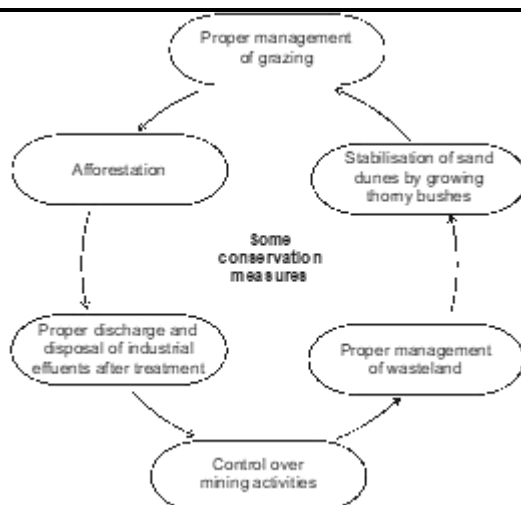
- (i) Natural cause :
By various natural agents, such as wind, water etc.
- (ii) Human cause :
(A) Deforestation, overgrazing by animals, careless management of forests.
(B) Mining & industry
(C) Over irrigation leads to increase in salinity and alkalinity in the soil.

Factors Responsible for Land Degradation :

1. **Mining** : It is the most important factor for land degradation.
(i) The mining sites are abandoned after excavation work is over. The excavation work leaves deep scars and other material which degrades the soil. This is common in states like Jharkhand, Chattisgarh, Madhya Pradesh and Orissa.
(ii) Mineral processing, grinding of lime stone, ceramic industry releases a heavy amount of dust, which later settles down in the surrounding areas.
2. **Overgrazing** : Overgrazing of land by animals results in removal of grass over a large area making it easy for wind and water to remove the soil. Example Gujarat, Rajasthan, Madhya Pradesh, Maharastra etc.
3. **Water Logging** : Over irrigation of land is also responsible for land degradation, water logging, increases salinity and alkalinity in soil making it unfit for cultivation.
4. **Industrialisation** : Industrial waste also leads to water and land degradation.

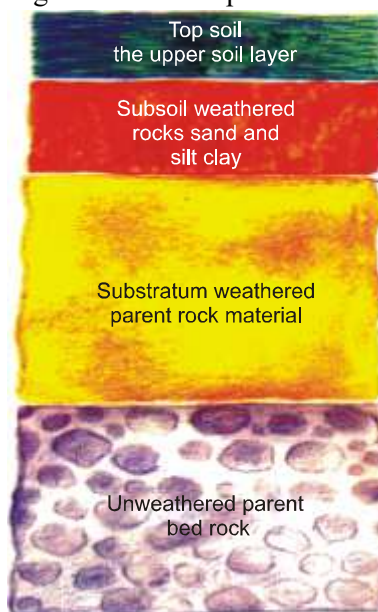


LAND CONSERVATION



SOIL

The uppermost layer of the earth's crust which is loose, fragmented & useful for plants is called soil. Rocks, climate, plants & animals, local topography & long period of time contributes to its formation & fertility. Chemical and organic changes which takes place in the soil are equally important.



Importance of Soil :

1. Soil is the medium in which plants grow. All living things depends directly or indirectly on soil for food.
2. Agricultural production is basically dependent on the fertility of the soil.
3. The rich deep fertile soils supports high density of population through agricultural prosperity.

Important factors of soil formation

1. **Parent Material :** The source of the rock fragments that make up the soil is parent material which may either be bedrock or loose sediments transported elsewhere by water wind or ice.
2. **Relief :** The most important being the slope of land Steep slope encourages the swift flow of the water, so steep slopes usually have a thin soil layer.
3. **Climate :** Temperature and moisture (rainfall) are the climatic variables of greatest significance in soil formation.
4. **Natural Vegetation :** Vegetation of various kinds growing in soil performs certain vital function.
 - (A) The decayed leaf material adds much needed humus to soil there by increasing its fertility.
 - (B) Roots hold the soil together and so prevent erosion.



CLASSIFICATION OF SOIL

Soil can be classified on the basis of colour, thickness texture & physical properties. Indian soil are classified as :

- | | | |
|------------------|---------------|----------------------|
| 1. Alluvial soil | 2. Black soil | 3. Red & Yellow soil |
| 4. Laterite soil | 5. Arid soil | 6. Forest soil. |

1. Alluvial soil :

Formation : Most of the soil are derived from the sediments deposited by rivers as in the Indo-Gangetic plain. It consists of sand silt and clay.

Features :

1. This is the most wide spread soil in India.
2. It is the most fertile soil.
3. Due to high fertility, they are intensively cultivated and are densely populated.
4. They are very fine grained, rich in potash and phosphoric acid but deficient in nitrogen and humus.
5. Alluvial soils are **deposited** by three important Himalayan river systems- the **Indus**, the **Ganga** and the **Brahmaputra**.
6. According to age alluvial soil is classified into :
 - (A) Old alluvial or Bhangar
 - (B) New Alluvial or Khadar

S.No.	Bhangar	Khadar
1	It is an old alluvium	It is a new alluvium
2	It is coarse and less fertile	It is not more fertile, fine and more sandy
3	It can't be renewed frequently	It is renewed frequently
4	It contains kankar nodules with calcium carbonate in the sub-soil	It contains no Kankar nodules
5	It is found in the upper reaches of the river	It is found around deltas and flood plains.

Crops : Rice, Wheat, Sugarcane, Tobacco, Jute, Fruits and Vegetables.

Regions : Extends over Northern plains, small parts of Rajasthan & Gujarat, Eastern Coastal plains particularly deltas of Mahanadi, Godavari, Krishna & Kaveri.



Alluvial Soil

2. Black Soil :

Formation : These soils have been formed due to the weathering of the lava spread over large areas during volcanic activity in the Deccan Plateau and different climatic conditions.

Features :

1. The black soils are made of extremely fine material i.e., clayey material.
2. These soils are rich in soil nutrients such as calcium carbonate, magnesium carbonate, potash and lime.
3. The soil is known for its capacity to hold moisture.
4. During dry condition deep cracks develop in the soil, this help in proper aeration of the soil.
5. When wet, the soil becomes sticky and is difficult to work with.
6. It is also known as regur soil.
7. Is ideal for growing **cotton** and is also known as black cotton soil.

Regions : These soils are mainly found in Maharastra, Western Madhya Pradesh, parts of Karnataka, Andhra Pradesh, Gujarat and Tamil Nadu.



Crops : Cotton, sugarcane, wheat, tobacco and oil seeds.



Black Soil

3. Red and Yellow Soil :

Formation : It is formed from igneous rock. Red colour is due to the presence of iron in the crystalline, igneous & metamorphic rock.

Features :

1. Soils are loamy in deep depression and in uplands they consist of loose gravels, highly coarse material.
2. Soils are deficient in phosphoric acid, organic matter and nitrogenous material but are fairly rich in potash.
3. Crops are cultivated with the use of fertilizers.

Crops : Cotton, wheat, rice, pulses, millets etc. can be produced by using fertilizers and irrigations.

Regions : Tamil Nadu, parts of Karnataka, South east of Maharashtra, Madhya Pradesh, Orissa and on the Chota Nagpur Plateau of Jharkhand.

4. Laterite Soil :

Formation : It develops in areas with high temperature and heavy rainfall. It is a result of intense leaching owing to heavy tropical rains.

Features :

1. The soils are acidic in nature, coarse and crumbly in texture.
2. Due to lack of nitrogen, potassium and organic elements laterite soil lack fertility and are not suitable for cultivation.
3. When the soils are manured and irrigated some crops can be cultivated.
4. They provide valuable building material.

Crops : Tea, Coffee, Rubber, Cinchona, Coconut, Cashewnut and Tapioca.

Regions : Karnataka, Kerala, Tamil Nadu, Madhya Pradesh and hilly areas of Orissa.

5. Forest Soil :

Formation : The soils are formed due to mechanical weathering caused by snow, rain, temperature variation etc.

Features :

1. These soils are heterogeneous in nature and their character changes with mountain environment and altitude.
2. The soils are very rich in humus but are deficient in potash, phosphorus and lime.
3. The soils are especially suitable for plantation of tea, coffee, spices and tropical fruits.

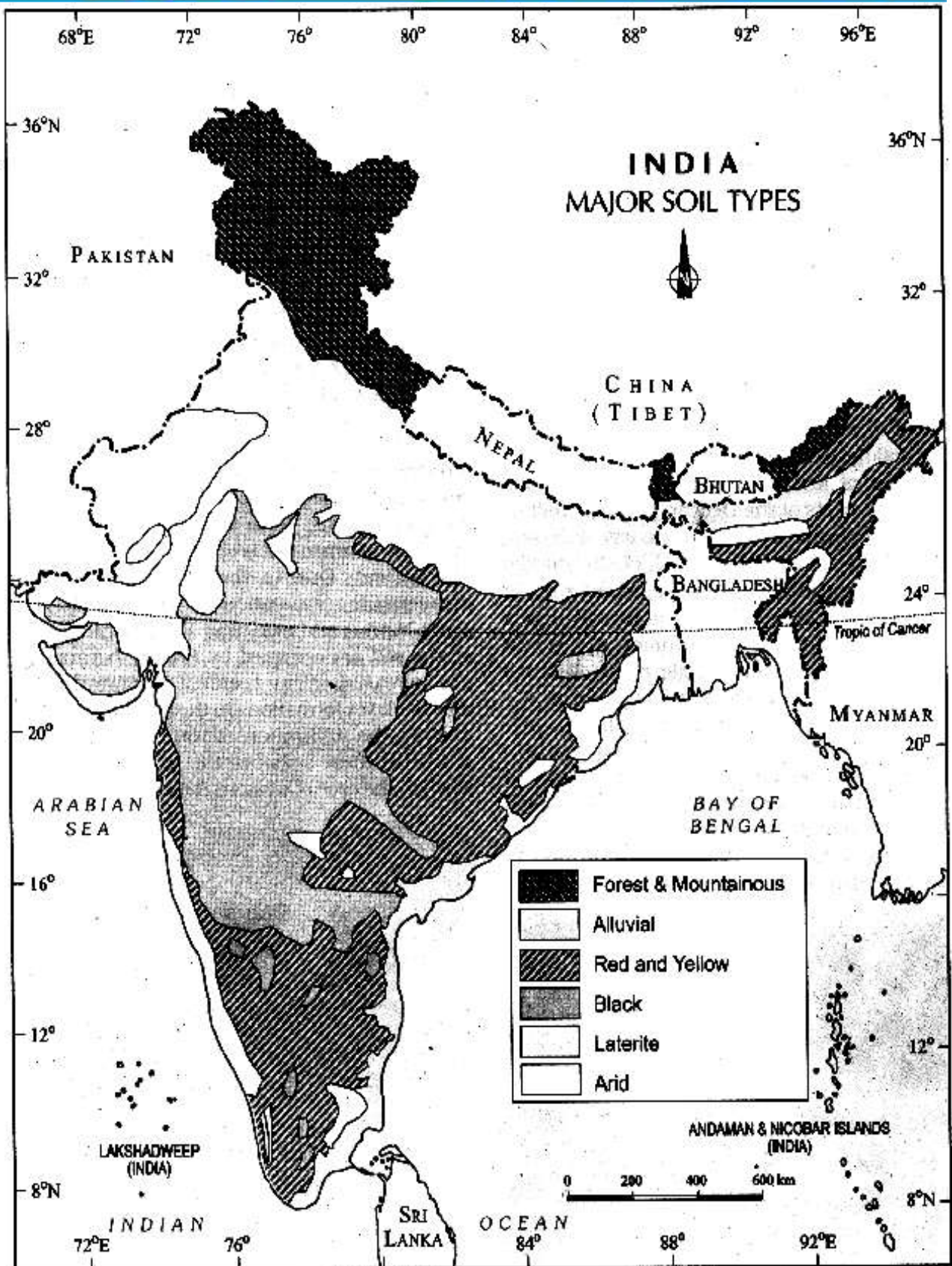
Regions : Hilly region of Jammu & Kashmir, Sikkim, Assam and Arunachal Pradesh.

6. Arid Soil :

Feature :

1. Colour ranges from red to brown.
2. Sandy in texture, Saline in nature. Common salt is obtained by evaporating the water.
3. Soil lacks humus & moisture due to dry climate and high temperature.
4. Lower layer of the soil contain Kankar due to calcium content.
5. With irrigational facilities soil becomes cultivable.

Regions : Western Rajasthan, Northern Gujarat and Southern Punjab.



India: Major Soil Types

SOIL EROSION



Soil Erosion : It is the removal of soil by the forces of nature like wind and water, more rapidly than the various soil forming process can replace it.

1. **Deforestation :** This has resulted in reckless cutting of forest which has led to the problem of soil erosion.
2. **Overgrazing :** This leads to loose structure of soil and the soil is easily washed away by rains.
3. **Wrong practices of Agriculture :** Ploughing field along the slope makes it easier for running water and wind to cause erosion.

Natural factors are the force of wind glacier & water.

Running water causes erosion in the following ways:

1. When deep cuts & channels are formed through the clayey soil gulleys are formed.
2. When land become unfit for cultivation it is called bad land.
3. When water flows as sheet over large areas down a slope, the soil is washed away, it is called sheet erosion.
4. Wind causes erosion by blowing away the loose soil over flat or sloping land.

Soil conservation :

1. Ploughing should be done along contour lines. This will reduce the flow of water.
2. Steps should be cut on the slopes to make terraces & restrict erosion.
3. Field should be divided into strips & strips of grass should be left to grow between the crops.
Such strip cropping breaks the force of wind.
4. Planting trees in a row as shelter belts. These shelter belts check the spread of desert.

IMPORTANT TERMS

1. **Afforestation :** It means planting trees.
2. **Conservation :** It means judicious and planned use of natural resource so that we can get the greatest possible benefit from these resources over the longest possible period of time.
3. **Fallow land :** It is a cultivable land which is being allowed to rest, uncropped or partially cropped for one or more reason so that it can regain its fertility.
4. **Gully Erosion :** It takes place when running water cuts deep ravines in the absence of vegetation. It makes soil unfit for cultivation.
5. **Land degradation :** Rendering the land unfit for cultivation is called degradation of land.
6. **Ravines :** A land which is unsuitable for cultivation due to soil erosion.
7. **Resource Planning :** It is a technique or skill or proper utilisation of resources.
8. **Soil :** The upper most layer of the earth's crust, which is loose fragmented and useful for growing plants is called soil.
9. **Soil Erosion :** The removal of soil by the forces of nature, particularly wind and water.
10. **Resources :** Object or things in the environment that fulfill the basic needs of man. These are technologically accessible, economically feasible and culturally acceptable.
11. **Resource Development :** An exercise that makes it possible to utilise the available natural resources for human satisfaction.
12. **Contour ploughing :** Ploughing along the contour lines instead of up and down the slope.
13. **Sheet Erosion :** Erosion of the top soil along gentle slopes caused by rain water.
14. **Bad land :** Land which is unsuitable for cultivation.
15. **Leaching :** Process of carrying away of soil nutrients by rain water.
16. **Net sown area :** It is the area sown with crops at least once in any of the crop season of the year but counted only once.
17. **Shelter belts :** Rows of trees which are planted in between the crops are known as shelter belts.