



- Soil is the loose material which forms the thin surface of Earth.
- It is formed by decomposition of organic matter and breaking up of rocks by different agents like water, wind, glacier etc.
- The organic matter formed by decomposition of plants and animals is called humus.
- Soil does not forms in a year but takes million of years for its formation.



Importance of Soil

- 1. it forms the basis for growth of crop. All agricultural production is dependent on the quality of soil. Example: Ganga plain is best suitable for growth of crops.
- 2. Soil support animal life and various animals like earthworms, rats live in soil.
- 3. It forms the basis for the growth of various plants consisting of fruits and vegetables which are necessary for survival of human life.



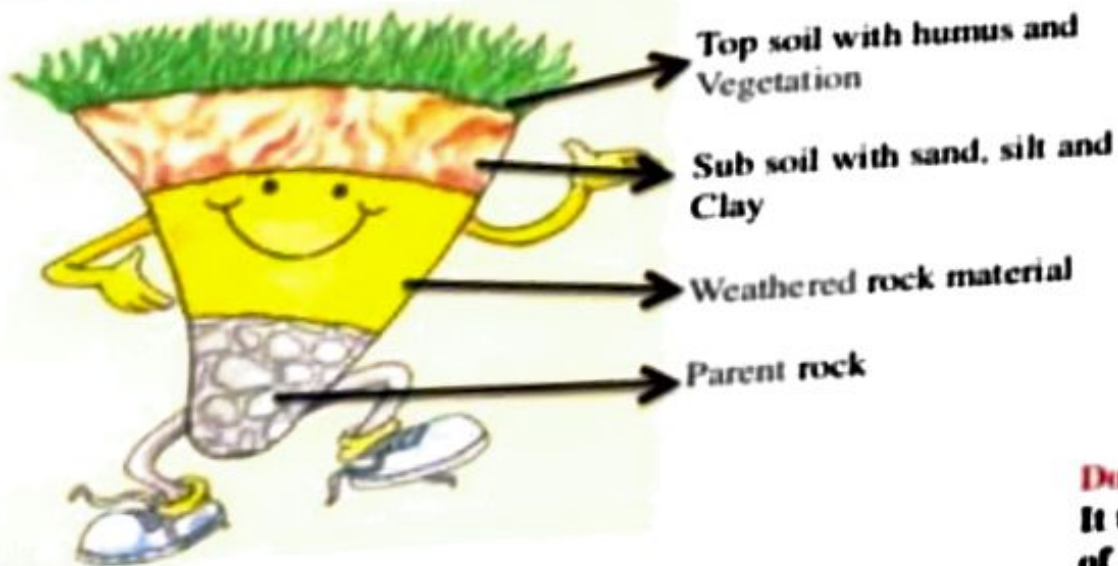
1. **Parent Material:** the material like rocks, organic matter is called parent material. Rocks are converted into fine sediments made by weathering caused by different agents like water, wind etc.

2. **Relief:** The uneven nature of earth surface called relief. Steep slope allows water to move fastly thus does not help in soil formation. Gentle slope allow deposition of sediments brought by rivers and help in formation of soil.

3. Natural Vegetation: it refers to growth of plants in an area . Plants bind the soil particles together and provide leaf material which acts as a humus for soil. So areas which have high natural vegetation have good soil.



SOIL



Do you know?
It takes hundreds of years to make just one centimeter of soil

- Studying the soil vertically is called Soil Horizon.
- It is divided into three parts:
- **Horizon A:** it is the topmost zone. In this minerals, nutrients, organic matter is present .
- **Horizon B:** It is the transition between horizon A and C
- **Horizon C:** It consist of loose material . It forms the first layer of soil formation.

Classification of Soils

was classified into 2 Urvara (Fertile soils).

Department of Agriculture

Inceptisols, Entisols, Alfisols.

Department of Agriculture, characteristic and
Department of Agricultural Research (ICAR):



PAKISTAN

PUNJAB

HARYANA

DELHI

UTTAR PRADESH

BIHAR

BANGLADESH

TRIPURA

MEGHALAYA

MANIPUR

MIZORAM

MYANMAR

RAJASTHAN

JHARKHAND

WEST BENGAL

GUJARAT

MADHYA PRADESH

ORISSA

CHHATTISGARH

DIU AND DAMAN
DADRA NAGAR
HAVELI

MAHARASHTRA

BAY OF BENGAL

TELANGNA

YAMAN (Puducherry)

ARABIAN SEA

GOA

ANDHRA PRADESH

KARNATAKA

PUDUCHERRY

MAHE (Puducherry)

KARAIKAL (Puducherry)

KERALA

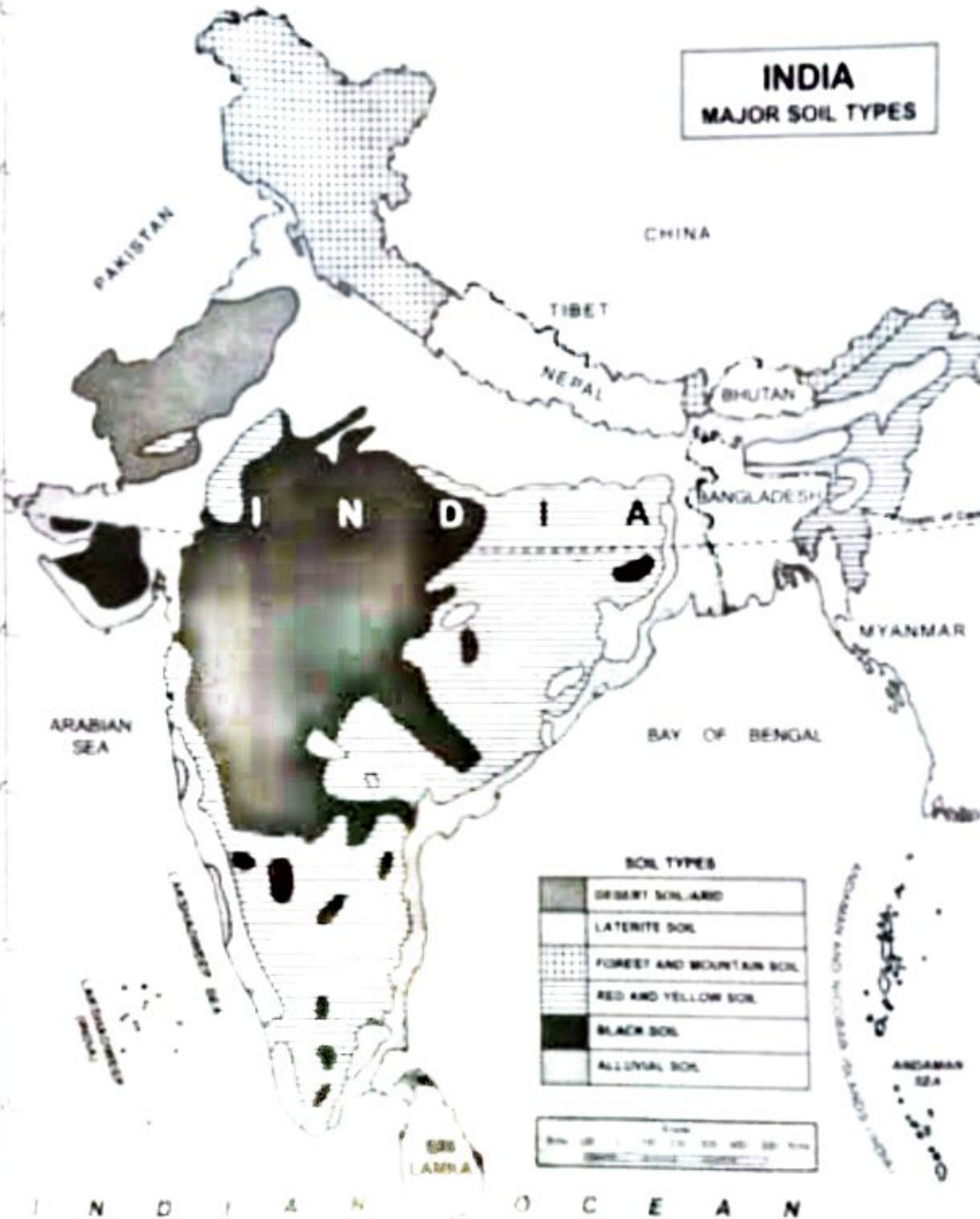
TAMILNADU

SRI LANKA

ANDAMAN AND NICOBAR ISLANDS (INDIA)

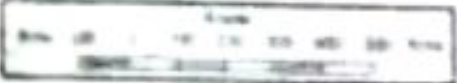
INDIA

MAJOR SOIL TYPES



SOIL TYPES

	DESERT SOIL/ARID
	LATERITE SOIL
	FOREST AND MOUNTAIN SOIL
	RED AND YELLOW SOIL
	BLACK SOIL
	ALLUVIAL SOIL



I N D I A N O C E A N

INDIA

MAJOR SOIL TYPES

PAKISTAN

CHINA

TIBET

NEPAL

BHUTAN

BANGLADESH

MYANMAR

ARABIAN SEA

BAY OF BENGAL

I N D I A

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	LATERITE SOIL
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1981
LAKSHMI

ANDAMAN SEA

I N D I A N O C E A N

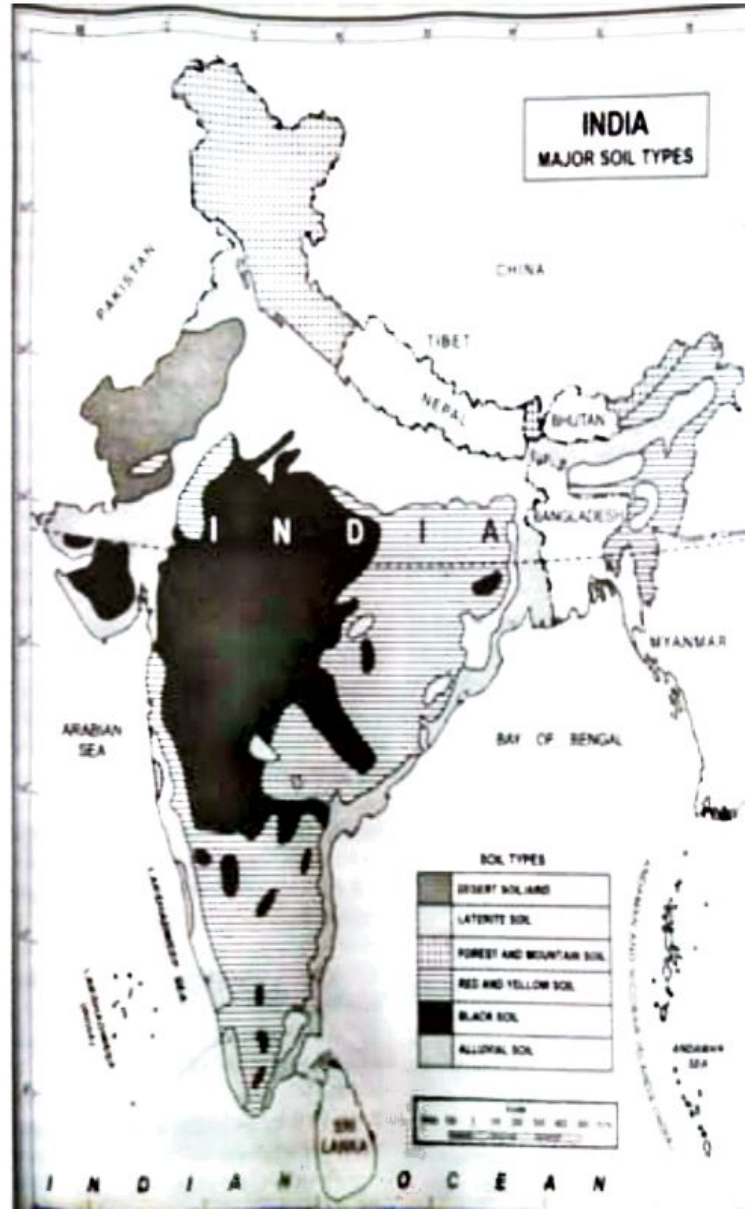
3.Desert Soil

- This soil is found in areas of high temperature and low rainfall. It is because of these conditions, the salt get deposited on the top layer of soil.
- The soil lack nitrogen and humus as it lack vegetation cover and thus is not suitable for agriculture.
- The colour of the soil varies from red to light brown.
- in this type of soil, kankars are also present
- This soil is found in states like Rajasthan, parts of South-West Punjab.



4. Black Soil or Regur Soil

- 1.They are formed by solidification of lava in Deccan Plateau and therefore rich in minerals.
- 2.They are clayey in nature,
- 3.They have capability of storing moisture for a long time.
- 4.During rainy season, it becomes sticky and it becomes difficult to plough. During Summer season, moisture gets evaporated and deep cracks appear on the soil.
- 5.They contain Iron, Aluminum, Potash but lack nitrogen, phosphorus and organic matter.
- 6.They are suitable for the growth of cotton.
- 7.They are found in states like Maharashtra, Karnataka, Madhya Pradesh and Andhra Pradesh.

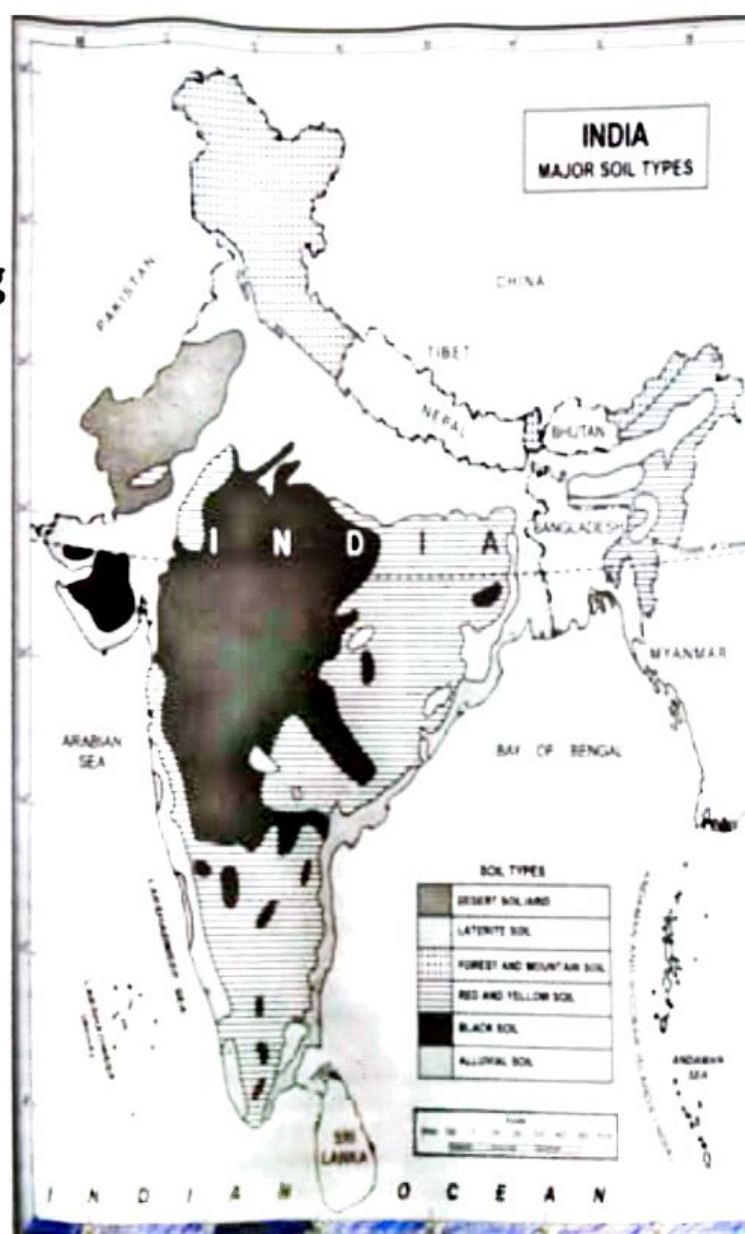


5. Laterite Soil

- These soils are formed by the process of leaching.
- Leaching is the process by which soil is being removed due to high temperature and high rainfall.
- Due to high rainfall, lime and silica are removed from soil and it is left with iron oxide and potash.
- The soil lacks organic matter, nitrogen and calcium.
- The soil becomes hard like brick when dries up and thus is not suitable for agriculture.
- This is found in states like coastal areas of Karnataka, Kerala, Tamil Nadu and Assam.

6.Red and Yellow Soil

- They are formed due to weathering of metamorphic rocks.
- They are red in colour due to high iron content in them.
- These soils are rich in potash, iron but lack lime, phosphate, nitrogen etc.
- With the application of fertilizers, they are suitable for the growth of wheat and rice.
- They are found in states like parts of Maharashtra, Karnataka, Chhattisgarh, Odisha, Jharkhand etc.



7. Peaty Soils

- They are found in areas of high rainfall and high humidity.
- They are formed due to high vegetation growth in that area.
- These soils are rich in humus and organic content.
- They are brown in colour.
- They are found in states like UK, coastal areas of West Bengal, Odhisha, Tamilnadu.



Soil Degredation

- It refers to decline in soil fertility and nutritional status of soil due to various human factors like deforestation, industalisation , urbanisation.



Soil Erosion

- It refers to the removal of top layer of soil by different agents of weathering like water, wind etc.
- Causes of Soil Erosion:
- **1.Deforestation:** Trees bind the soil particles together. Trees are cut by humans for building houses, laying roads etc. Cutting of trees makes soil particles loose and thus causes soil erosion.



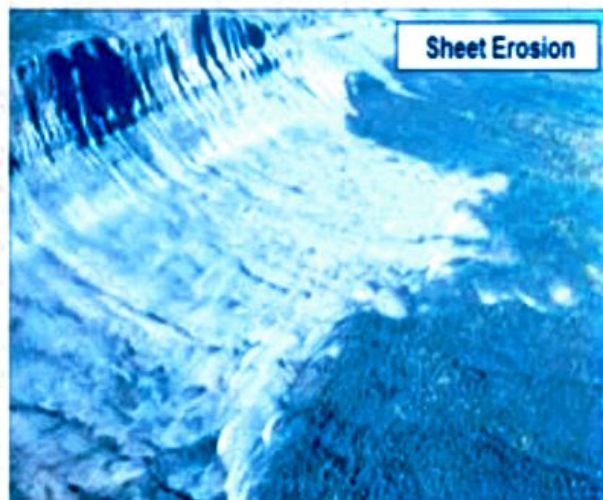
Soil Erosion





Types of Soil Erosion

- **1. Sheet Erosion:** when due to heavy rainfall, the topmost fertile layer is removed by water, it is called Sheet Erosion.
- **2. Gully Erosion:** On Steep slopes and areas with lack of vegetation cover, deep valleys are cut are called Gullies. Gully cut agricultural land and make it unfit for cultivation.
- **3. Desertification:** Large Scale Erosion in dry areas due to intensive cultivation, overgrazing and deforestation has led to decrease in the quality called as Desertification.



resource.

- Its fertility will give good agricultural production.
- Soil takes million of year for its formation. Therefore Soil needs to be conserved.

Soil Conservation refers to

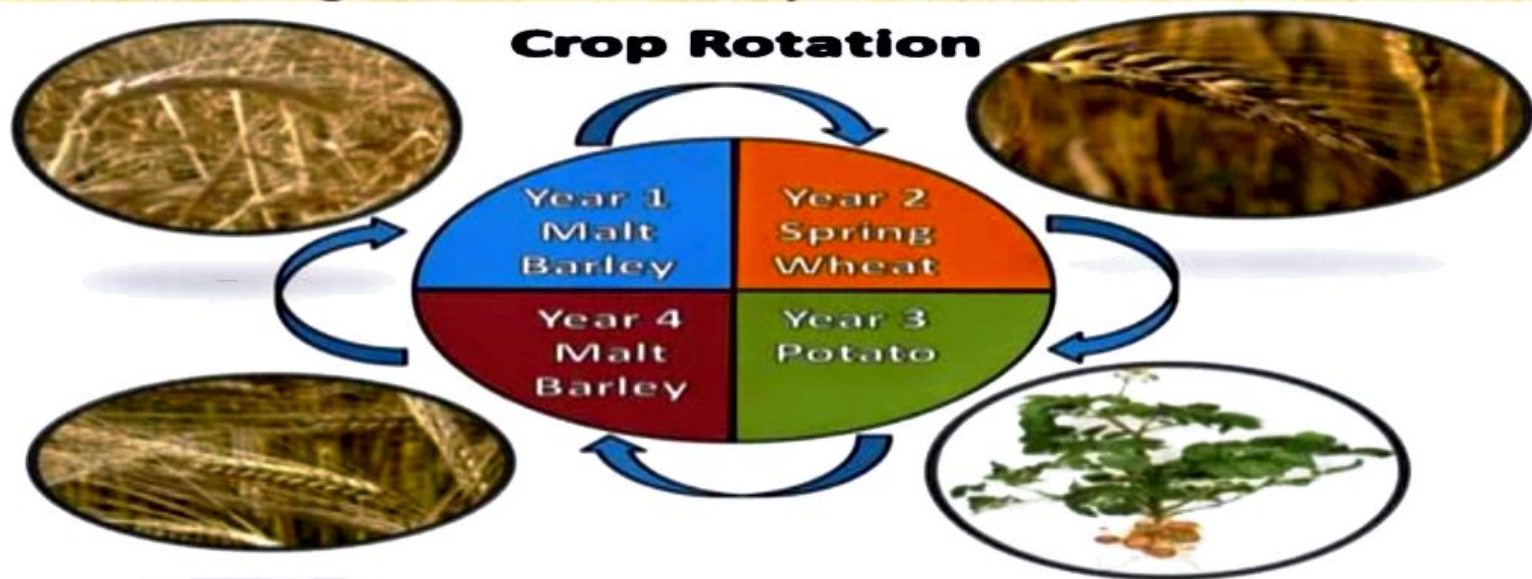


- **2. Making Dams and barriers:** Many rivers causes soil erosion due to heavy rainfall. Therefore there flow can be regulated by building barriers or dams in the middle so that there speed is decreased.



Fig. 25.8. A dam.

- **3. Keep a check on Overgrazing:** Separate grazing grounds can be made and animals should be sent there after timings.
- **4. Crop Rotation** should be applied. In this the crops should be grown in rotation as they help in maintaining the soil fertility.



- **5. Terrace farming** can be done in the hilly areas. Small steps can be made in mountainous areas which will help in reducing the water speed and thus help in reducing soil erosion.



- **6.Shelter Belts:** in this technique, trees are planted in the direction of winds. It is done so that wind does not cause erosion and their speed reduces



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- 7. **Contour Ploughing:** It is practice of ploughing along the contours of steep slope in mountains. With the help of this technique, surface run off and soil erosion can be decreased.

