

Chapter- 6

Soil Erosion and Conservation

STUDY NOTES**Let's Learn****Soil:**

- The uppermost layer of the Earth is the soil.
- Soil is made up of small particles of broken-down rocks, remains of dead plants and animals, water and air.

**Importance of Soil:**

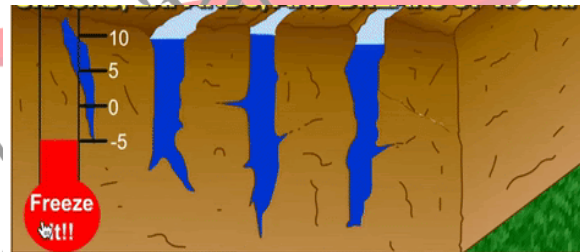
- Plants use the nutrients in the soil to grow and make food.
- All animals depend on plants directly or indirectly for food.
- Many animals live in the soil.
- We use products from the soil to build our homes.

Therefore, soil is the foundation of all life on earth.



Formation of Soil:

- Soil is formed by the breaking down of rocks into small pieces by a process called weathering.
- Weathering can be caused by animals, plants, rain, flowing water, wind and weather changes.
- The sun heated the rocks. The rain made them cold and the wind blew over them. This continued for thousands of years. As a result, the rock broke into small pieces. These small pieces broke into still smaller pieces and carried away by wind and water. They rubbed against each other till they become tiny particles called soil.



Soil Erosion:

- As the soil forms, it settles down in layers. The topmost layer is known as topsoil. The topsoil has humus and is the fertile layer of soil.
- Sometimes, the topsoil is carried away by wind or water to a different place. This removes the fertile portion of soil and hence the land becomes barren and unfit for farming.
- The process of water or wind carrying away soil is called soil erosion.



Agents of Soil Erosion:

- Wind
- Running water
- Rain

Causes of Soil Erosion:

- Running water
- Wind
- Human beings

Running water causes soil erosion:

- Heavy rain cause floods. Flooded rivers and running water remove the topsoil. Running water washes the soil off the hill slopes. This makes the slope unfit for cultivation. The Chambal valley of Madhya Pradesh is one such example.
- A river coming down the hill carries a lot of mud with it. Upon reaching the plains the flow of rivers slows down. It leaves part of the soil on its way. Over a period of time soil accumulates and make the river changed its course.
- The yellow river in China called Hwang Ho, also known as Sorrow of China, because it changes its course very often. This resulted in loss of life and property.
- In Bihar, river Kosi which changes its course frequently caused great havoc in 2008 when lacks of people were affected.

Wind causes soil erosion:

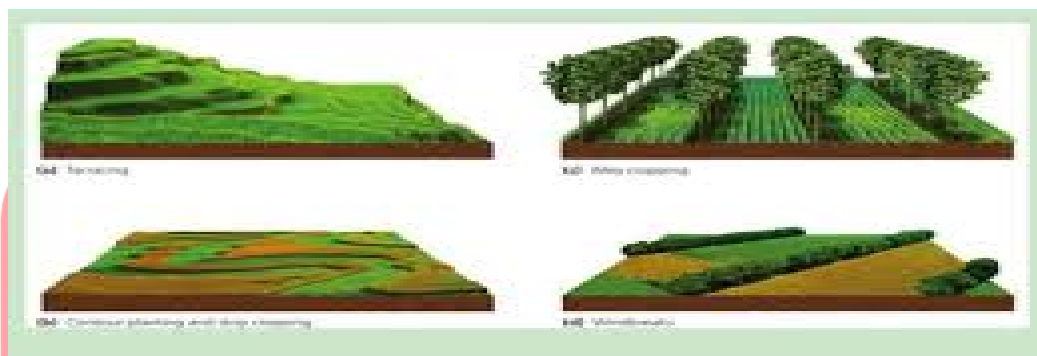
- In desert and semi-desert regions where strong wind blows, a lot of topsoil is carried away. This affects the farmers because manure too is blown away.
- Quite often the roots of plants lose their soil cover and the plants die.

Human beings cause soil erosion:

- Roots of trees and plants hold the soil together.
- Cutting down of trees in large numbers causes deforestation which is a major cause of soil erosion. When trees are cut down the soil becomes loose and is easily carried away.
- Ploughing of hill slopes leads to soil erosion.
- Overgrazing by cattle also causes soil erosion.

Soil Conservation:

The protection of soil against erosion is known as soil conservation.



Ways to conserve soil:

- **Afforestation:** Planting trees is known as afforestation. It is very effective in preventing soil erosion.



- Grass grown on slopes prevents soil erosion caused by water flowing down the slopes.



- **Soil Cover:** The soil can be easily eroded by wind and water. To prevent this, farmers either grow grass or cover the land with dried vegetation.



- **Shelterbelts:** Growing fences or trees along the edge of farmland as wind breakers, reduce soil erosion by reducing the speed of wind.



- **Terrace Farming:** Along the slopes of the hills, farming is done by cutting steps in the slopes. This reduces the speed of water as it flows down, thus reducing soil erosion.



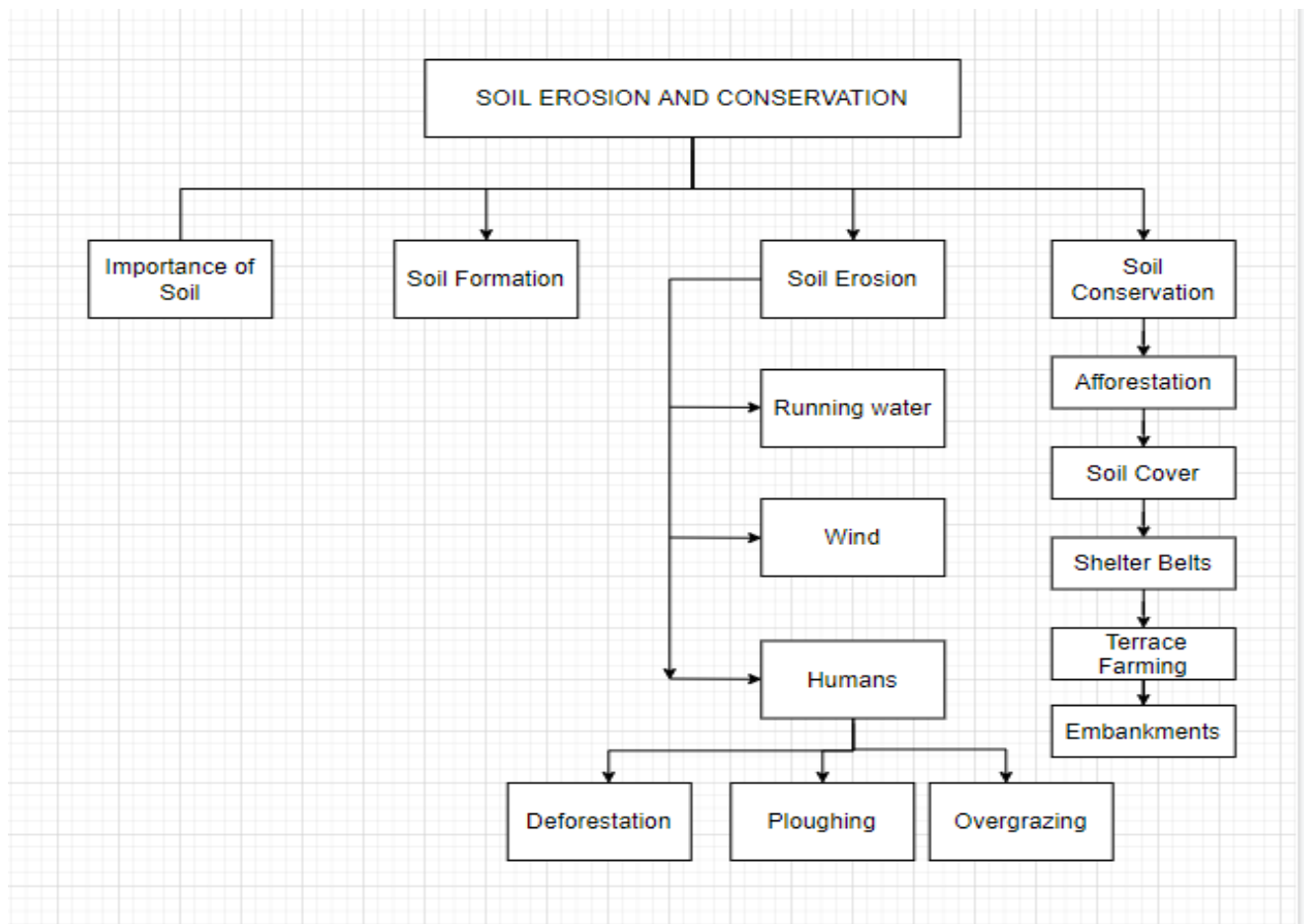
- **Building Embankments:** Rivers constantly erode the soil on their banks. Strong embankments of rocks and soil built along the banks prevent this.



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Let's Know More

I. Choose the correct answer.

1. The soil/ Rock/ sky is the uppermost layer of the earth.
2. River Kosi caused havoc in Bihar/ Assam/ Orissa in 2008.
3. Heavy rain causes deforestation/ flood.

Let's Do

A. Tick the correct answer.

1. The wearing of or getting away of soil by the action of water or wind is called
 - a. storm
 - b. flood
 - c. soil erosion
 - d. deforestation
2. This may lead to soil erosion.
 - a. Terrace farming
 - b. Growing of crops
 - c. Afforestation

- d. Deforestation
3. Soil is mostly conserved by
- Afforestation
 - Deforestation
 - making dams
 - overgrazing
4. The Hwang Ho river which changes its course every year is in
- Holland
 - China
 - India
 - Sri Lanka
5. Afforestation is a term which means
- felling of trees
 - overgrazing
 - growing trees
 - making dams

B. Fill in the blanks.

1. Running water washes away soil of _____ (Hill slopes/ plains).
2. _____ (artificial/ natural) forces like wind, rain and running water help in soil formation.
3. Plants and trees hold the soil together by their _____ (roots/ stems).
4. At places where strong wind blows, _____ (manure/ seeds) too is /are blown away along with topsoil.

C. Match the columns.

1. Loss of soil	a. Afforestation
2. Sorrow of China	b. Deforestation
3. Cutting down trees	c. Hwang Ho
4. Protection of soil	d. Soil erosion
5. Planting more trees	e. Soil conservation

Understand and Answer

D. Write short answers.

1. What is meant by soil erosion?

2. What is soil conservation?
3. What is meant by afforestation?
4. When is 'Earth Day' celebrated every year?
5. What do the three Rs stand for?

E. Answer these questions.

1. Why do we say that soil is the foundation of life?
2. How was soil formed from rocks?
3. How does water act as an agent of soil erosion?
4. Why do some rivers change their course?
5. How is man responsible for soil erosion?
6. List three ways by which soil can be conserved.

Teacher's Note

- The soil is a precious resource. Plant more trees around your home to help protect soil from erosion.
- Visit a hilly region or a river bank where farming is done. Observe the farming techniques that have been adopted in these areas and give a presentation in class.

Improve Your GK

- The soil is the great connector of lives, the source and destination of all.
- It takes 500 years to produce just under an inch of topsoil; this is the most productive layer of soil.
- It greatly reduces flood risk by storing up to 9200 tones of water per acre.

Answer Key

I.

1. Soil
2. Bihar
3. Flood

A.

1. Soil erosion
2. Deforestation
3. Afforestation
4. China
5. Growing trees

B.

1. Hill slopes
2. Natural
3. Roots

4. Manure

C.

1. Loss of soil	a. Afforestation 5
2. Sorrow of China	b. Deforestation 3
3. Cutting down trees	c. Hwang Ho 2
4. Protection of soil	d. Soil erosion 1
5. Planting more trees	e. Soil conservation 4

D.

1. The wearing down and carrying away of soil is called soil erosion.
2. The protection of soil against erosion is called soil conservation.
3. The process of growing more trees by planting saplings is called afforestation.
4. Earth Day is celebrated on 22nd April every year.
5. The three Rs stand for Reduce, Reuse and Recycle.

E.

1. Soil supports plants which provide food to all living things on this planet. Thus, soil is the foundation of all life on earth.
2. The sun heated the rocks. The rain made them cold, and wind blew them over. These continued for thousands of years. As a result, the rocks broke into pieces. These pieces broke into still smaller pieces. They were carried around by wind and water. They rubbed against each other till they become tiny particles. It took millions of years for these tiny particles to change into loose material which we call soil. Thus, soil formed from rocks.
3. Water acts as an agent of soil erosion as they carry away the top layer of soil causing soil erosion. In heavy rain or floods soil gets carried because of water coming with high speed and heavy force. Top layer of soil gets carried away which makes soil infertile and causes soil erosion.
4. When a river comes down from the hill it carries a lot of mud with it. When it reaches the plains, the flow of the river slows down and leaves part of the soil on its way. Over a period of time soil accumulates and makes the river change its course.
5. Man is responsible for soil erosion in the following ways:
 - Deforestation or felling of trees
 - Ploughing of hill slopes
 - Overgrazing by cattle
6. Ways by which soil can be conserved:

- **Afforestation:** Planting trees is known as afforestation. It is very effective in preventing soil erosion.
- **Soil Cover:** The soil can be easily eroded by wind and water. To prevent this, farmers either grow grass or cover the land with dried vegetation.
- **Shelterbelts:** Growing fences or trees along the edge of farmland as wind breakers, reduce soil erosion by reducing the speed of wind.
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