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CLASS – 10

SOCIAL SCIENCE

Contemporary India–II

CH-1
Resources and Development

Part – 5

Soil Resource

Pankaj Vaishnav

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OVERVIEW

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1. Resource
2. Development of Resources
3. Resource Planning
4. Land Resource
5. Soil Resource

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COMPETENCY BASED LEARNING

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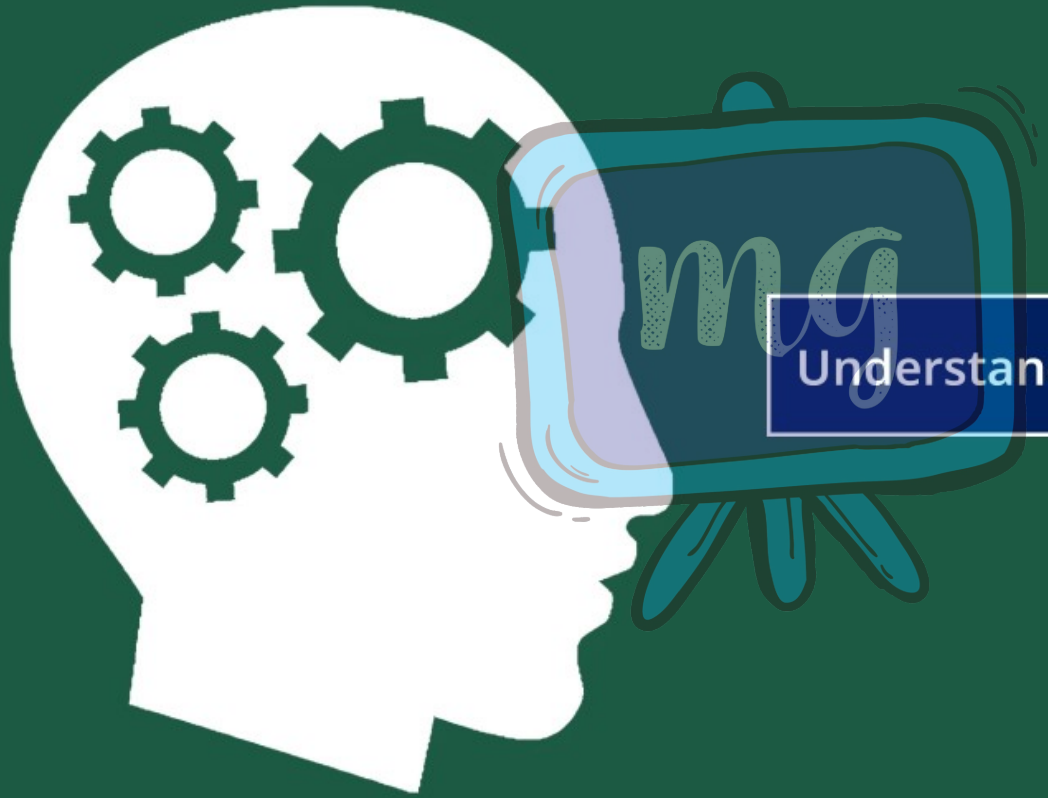

Understanding Soil as a Vital Resource

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SOIL

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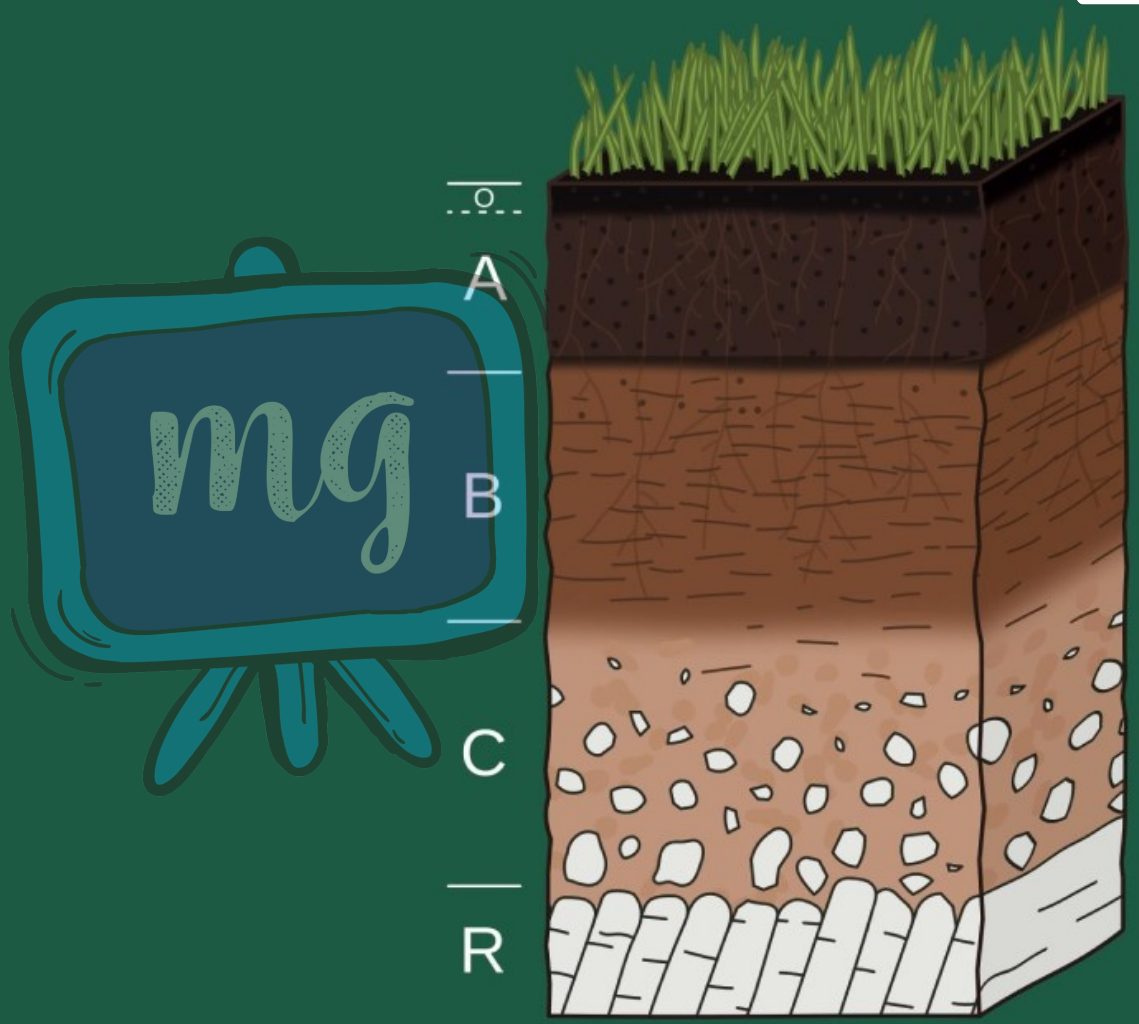

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SOIL

- Renewable Natural Resource
- Consists:-
  - Organic Materials(Humus)
  - Inorganic Materials
- Medium of Plant Growth
- Supports Living Organisms
- It Takes Millions of Years to Form Soil Up to a few cm. in Depth

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CLASSIFICATION OF SOIL

INDIA HAS VARIOUS

- Landforms
- Vegetation
- Climatic Conditions

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SOILS OF INDIA ARE CLASSIFIED ON THE BASIS OF:–

- Factors Responsible for Soil Formation
- Color
- Thickness
- Texture
- Age
- Chemical & Physical Properties

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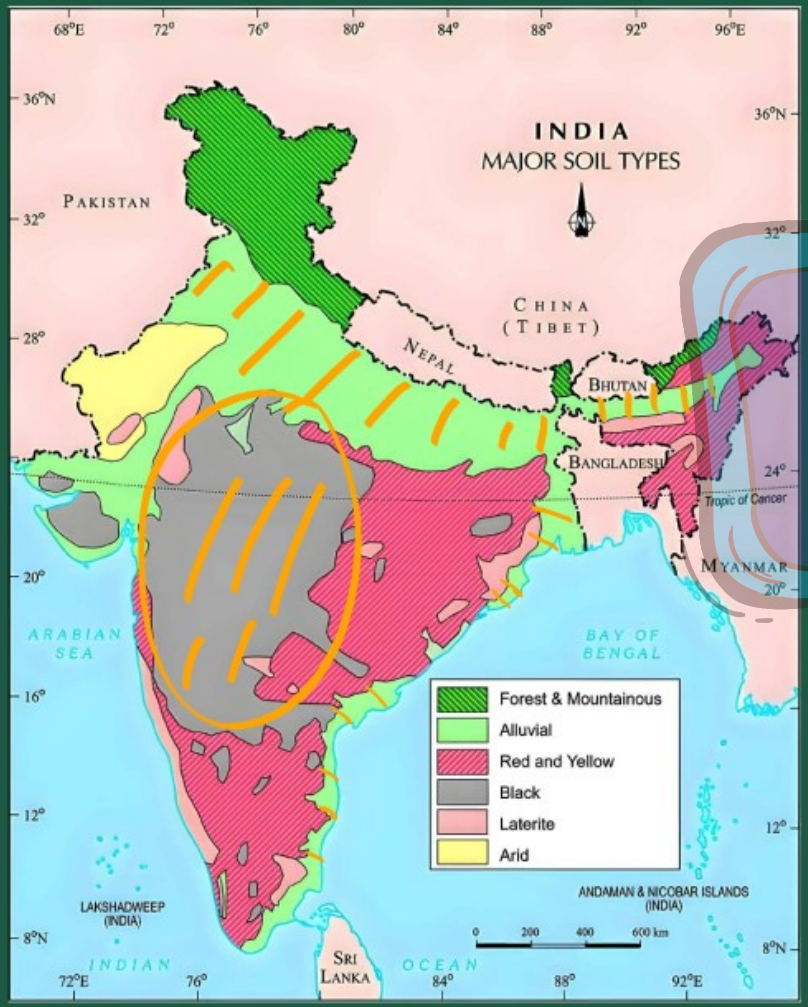

CLASSIFICATION

1. Alluvial Soil
2. Black Soil
3. Red & Yellow Soil
4. Laterite Soil
5. Arid Soil
6. Forest Soil

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1 ALLUVIAL SOIL

- Most Fertile Soil.
- Intensively Cultivated & Densely Populated.

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- Most Widely Spread soil.

(Spread over 40% of India)

- **Distribution**
  - Entire Northern-Plains (Indus, Ganga & Brahmaputra)
  - Eastern Coastal Plains. (Deltas of Mahanadi, Godavari, Krishna, Kaveri)

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- Adequate Proportion

  Potash, Phosphoric Acid & Lime.

- Ideal for the growth of: -

  - Wheat
  - Paddy
  - Sugarcane
  - Pulse

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ALLUVIAL SOIL

Old Alluvial (Bangar)

Higher Concentration of Kanker Nodules

New Alluvial (Khadar)

More Fine Particles

More Fertile

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2 BLACK SOIL (REGUR SOIL)

- Ideal for growing Cotton.
  (So, known as Black Cotton Soil)
- Formed from lava flows.
- High capacity to hold moisture.

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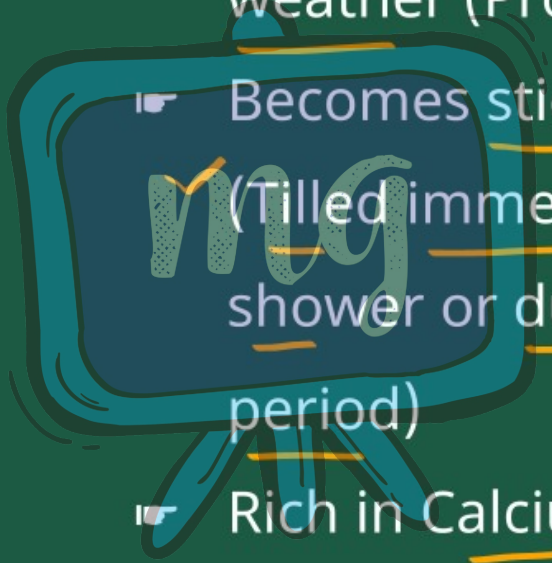
- Develops deep cracks during hot weather (Proper aeration).
- Becomes sticky when wet. (Tilled immediately after the 1st shower or during the pre-monsoon period)
- Rich in Calcium Carbonate, Magnesium, Potash, Lime.
- Poor in Phosphoric Contents.



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☛ Distribution

- ✧ Maharashtra, Saurashtra, Malwa, Madhya Pradesh, Chhattisgarh.
- ✧ Godavari & Krishna Valley.

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3 RED AND YELLOW SOIL

- Appears Red due to diffusion of Iron.
  Appears Yellow when hydrated.
- Develops on crystalline igneous rocks in areas of low rainfall.

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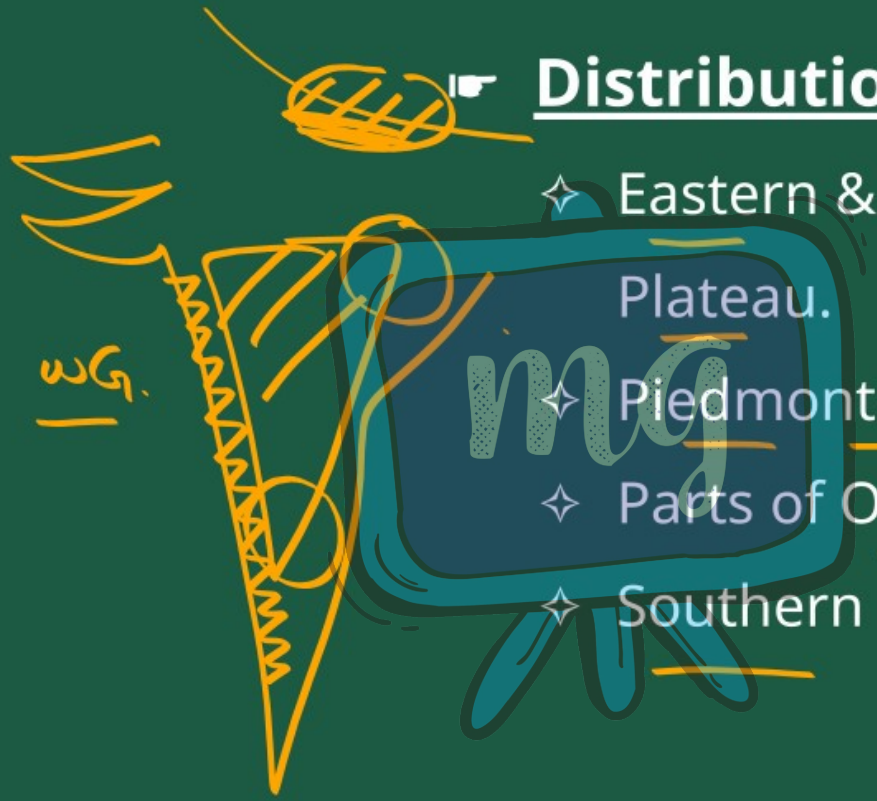

Distribution

- Eastern & Southern Deccan Plateau.
- Piedmont Zone of Western Ghats.
- Parts of Odisha & Chhattisgarh.
- Southern Middle Ganga Plain.

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4 LATERITE SOIL

- Develops in areas with alternate wet & dry season.
- Less Fertile.
  (Heavy rainfall leaching away nutrients)

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- Acidic (pH < 6.0).
- Humus-rich under forest cover.
- Prone to erosion & degradation. (Hilly Areas)

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☛ Distribution

- ✧ Southern States
- ✧ Maharashtra(Western Ghats)
- ✧ Odisha
- ✧ Parts of West Bengal
- ✧ Northeast India

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☛ With Proper Management

- ✓ Kerala
- ✓ Tamil Nadu
- ✓ Karnataka
- ✓ Tea & Coffee

- ✓ Kerala
- ✓ Tamil Nadu
- ✓ Andhra Pradesh
- ✓ Cashew Nut

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5 ARID SOIL

- Found in dry, arid regions.
- Red to Brown in color.
- Sandy in texture.
- Saline in nature (High Evaporation)

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- Lack in humus and moisture.

(High Temperature & Dry Climate)

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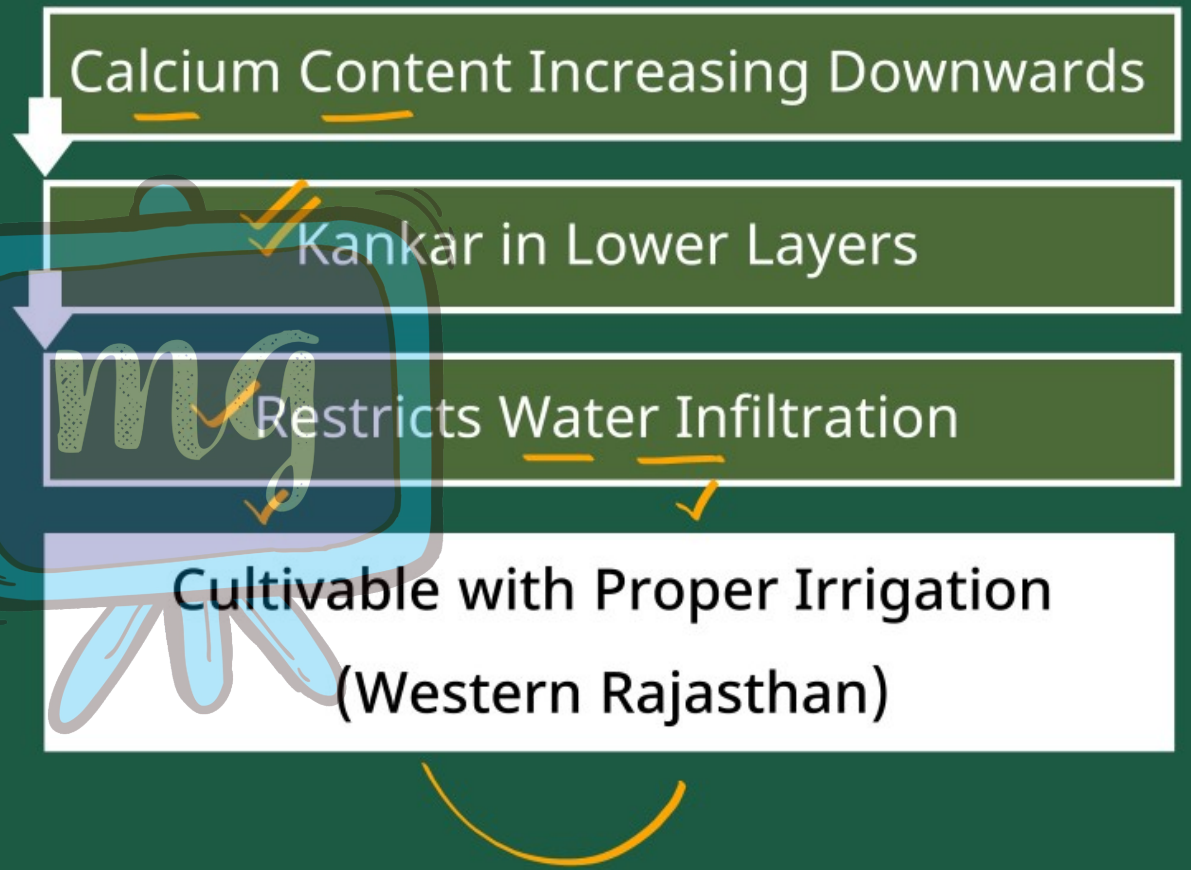

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6 FOREST SOIL

- Found in forested hilly & mountainous areas.
- Texture varies across the landscape.

Valley Side → Loamy/Silty

Upper Slopes → Coarse Grained

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- In Snow covered areas of Himalayas: -
  - Denudation
  - Acidic with Low Humus

- In Lower Parts of Valley: -
  - Fertile Soil

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SOIL EROSION & SOIL CONSERVATION

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SOIL EROSION

- Removal and Washing Away of the Top Most Fertile Layer of Soil
- Soil Formation and Erosion are Natural Processes
- Generally, There is a Balance Between Them

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Human Activities Disturb the Balance

Deforestation

Over-Grazing

Construction

Mining

Natural Forces Lead to Soil Erosion

Wind

Water

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SOIL EROSION

- Water Erosion

- Wind Erosion

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WATER EROSION

- Removal & transportation of soil by water.

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1. GULLIES

- Deep channel created by running water.

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- It makes the land unfit for cultivation. (Bad Land)
- Ravines: - Bad Land in Chambal Basin.

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2. SHEET EROSION

☛ Water flows as a sheet, down the slope in large areas, washing away top soil.

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WIND EROSION

- Removal & transportation of soil by wind.
- Wind loose soil off flat or sloping land.

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ANOTHER CAUSE OF SOIL EROSION

- Defective methods of Farming.
- **Example**
  - Ploughing in wrong way.
  - It forms channels for water runoff which leads to soil erosion.

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SOIL CONSERVATION

1. Contour Ploughing
2. Terrace Farming
3. Strip Cropping
4. Shelter Belts

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1 CONTOUR PLOUGHING

- Plowing across slopes, slows water flow, which reduce soil erosion.

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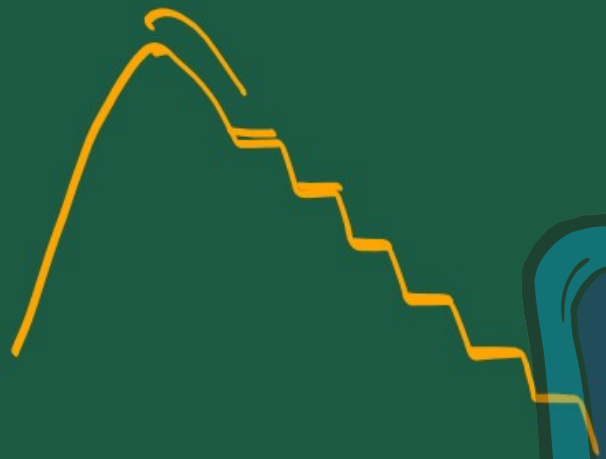

2 TERRACE FARMING

- Steps cut out on slopes, create flat area for farming (Terrace).
- It reduce erosion.

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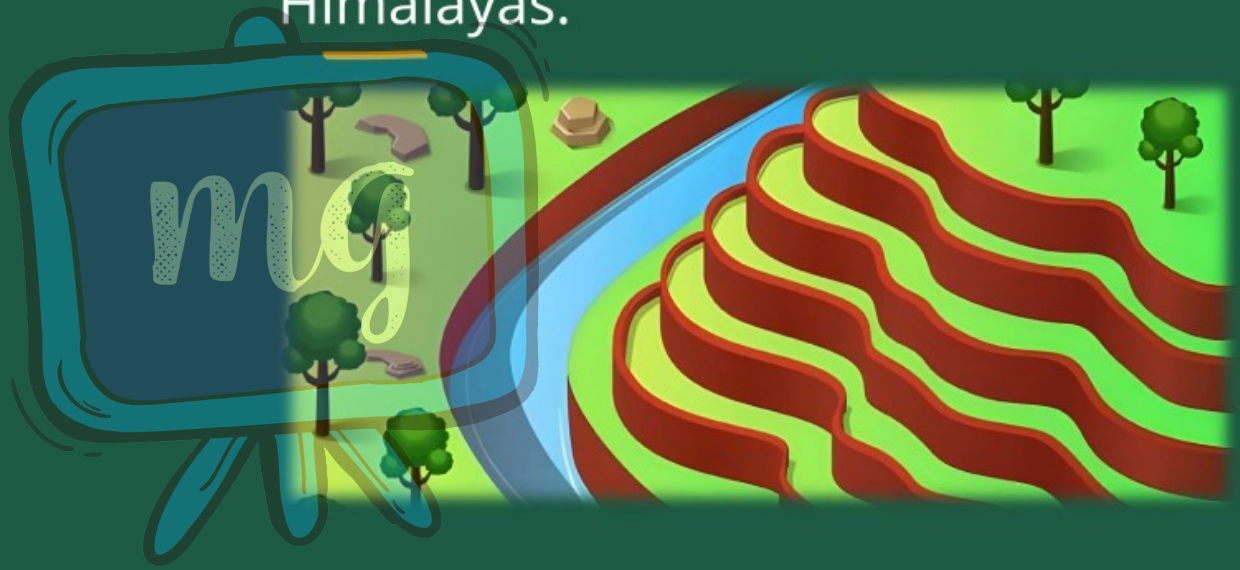
- Common in Western & Central Himalayas.



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3 STRIP CROPPING

- Large fields divided into strips.
- Allow grass to grow between crops.

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- It breaks up the force of the wind and reduce erosion.

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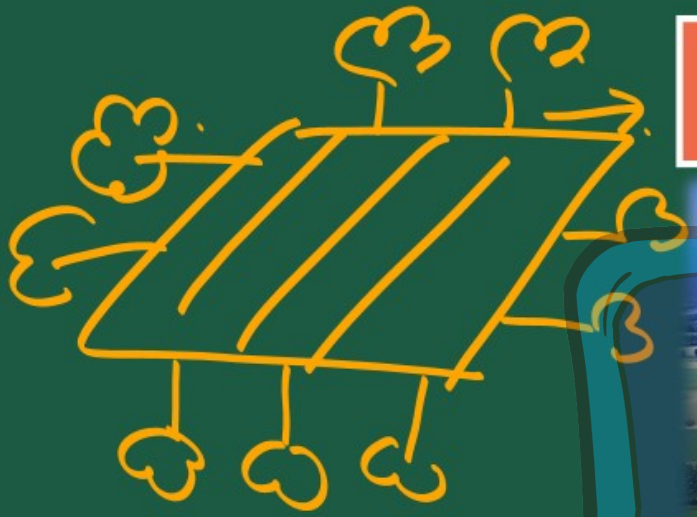

4 SHELTER BELTS

- Lines of trees.
- It reduce wind force.
- Helps stabilize sand dunes.

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- Important in Western India's desert regions.

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LEARNING OUTCOMES

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Sustainable Practices for Soil Conservation

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ASSESSMENT

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1 Which of the following soils are formed by intense leaching?

A Alluvial Soil

B Red Soil

C Laterite Soil

D Desert Soil

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ASSESSMENT

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2 Which of the following is **NOT** a measure to reduce soil erosion?

A Contour Ploughing ✓

B Strip Cropping ✓

C Planting of Shelter Belts ✓

D Creating Deep Channels (Gullies)

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ASSESSMENT

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3 In which of the following States is the terrace cultivation practiced?

A Punjab

B Haryana

C Plains of Rajasthan

D Uttarakhand