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RESOURCES AND DEVELOPMENT

CLASS 10th

UNDERSTAND THE WORLD AROUND YOU

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By : NISHANT KUMAR

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Topics covered :

1. Soil as a resource
2. Alluvial soil
3. Black soil
4. Red and Yellow soil
5. Laterite soil
6. Arid soil
7. Forest soil
8. Soil Erosion
9. Soil Conservation

Soil As A Resource :

1.Soil is the most important renewable natural resource.

2.Soil takes millions of years to form.

3.Important factors in the formation of soil are : relief, parent rock or bed rock, climate, vegetation,other forms of life, time

4.Forces of nature such as variations in temperature, actions of running water, wind, glaciers, activity of decomposes contribute significantly in the formation of soil.

5.Soil consists of organic materials (humus) and inorganic materials.

Que: Soil is a resource of utmost importance. Justify

Pointers to frame the answer :

Foundation for Agriculture

Supports Biodiversity

Natural Water Filter

Climate Regulation

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ALLUVIAL SOIL

1. MWS (Most Widely Spread soil)
2. ENP (Entire Northern Plains made up of alluvial soil)
3. BIG rivers- Brahmaputra, Indus, Ganga
4. Found in deltas of My Good Kind Kid (Mahanadi, Godavari, Krishna, Kaveri)
5. Contains SSC (Sand, Silt, Clay)
6. Bigger soil particle found in piedmont plains such DCT(Duars, Chos , Terai)
7. K B (alluvial soils are of 2 types Khadar and Bangar based on their age)
8. Rich in nutrients like Po Pho Li (Potash, Phosphoric acid, Lime)
9. Ideal for growing sugarcane, paddy, wheat, cereal, pulses.
10. In drier areas alluvial soils are Alkaline(meaning soil is basic having Ph more than 7.3 and contains Calcium carbonate which leads to swelling and poor soil structure)

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BLACK SOIL

1. **BC** (**B**lack in **C**olour)
2. **RS / BCS** (also known as **Regur soil / B**lack **C**otton **S**oil).
3. **Climatic condition + Parent rock material =** Formation of Black soil
4. Mostly found in **Deccan Trap** region.
5. Black soil is made up of **lava flows.**
6. This soil covers the plateaus of **Maha Ma Ma S C** (**Maha**rashtra, **Ma**lwa, **Ma**dhya Pradesh, **S**aurashtra, **C**hhattisgarh)
7. Also found in valleys of **Krishna & Godavari.**
8. Made up of clayey material.
9. **CHM** (well known for their **c**apacity to **h**old **m**oisture)
10. Rich in nutrients like **Caca Po Ma Li** (**Ca**lcium **ca**rbonate, **Po**tash, **Ma**gnesium, **Li**me)
11. Generally poor in **phosphoric** contents.
12. Develops **deep cracks** during hot weather and becomes **sticky** when wet.

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RED AND YELLOW SOIL

1.These soil develops on crystalline igneous rocks in area of low rainfall.

2.They are formed the weathering of igneous and metamorphic rocks.

3.Found in parts of Odisha, Chhattisgarh, piedmont zone of western ghats.

4.Soils develops reddish colour due to diffusion of iron in crystalline and metamorphic rocks.

4.Looks yellow when it occurs in hydrated form.

5.Suitable for growing cotton, groundnut, pulses, millets with proper fertilisation and irrigation.

Crystalline rocks have a crystal like structure because their mineral grains are closely packed and often interlocked.

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LATERITE SOIL

1.Later (derived from Latin word later meaning brick).
2.TC/STC (develops under tropical and sub tropical climate with alternate wet and dry spells).
3.This soil is result of intense leaching due to heavy rainfall.
4.They are acidic in nature with pH less than 6.0.
5.Soil is generally deficient in plant nutrients.
6.Occur mostly in southern states, western ghats region of Maharashtra, Odisha, some part s of West Bengal and North east region.
7.In the areas of deciduous and evergreen forests the soil is rich in humus.
8.Under sparse vegetation the soil generally lacks humus.
9.These soils are prone to erosion and degradation.
10.In hilly areas of Karnataka, Kerala, Tamil Nadu –useful for growing tea and coffee.
11.Red laterite soils in Tamil Nadu, Andhra Pradesh and Kerala ––suitable for growing cashew.

ARID SOIL

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1.Soil colour - Red to brown.
2.Are sandy in texture and saline in nature.
3.In some areas salt content is high—common salt is obtained by evaporating water.
4.Soil lacks humus and moisture—higher temperature so higher is evaporation.
5.Lower horizons of soil occupied by Kankar due to increasing calcium content downwards.
6. Found in arid and semi arid regions especially in Rajasthan and Gujarat.

FOREST SOIL

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1.Found in hilly and mountainous areas where sufficient rain forests are available.

2.They are loamy and silty in valley sides and coarse grained in the upper slopes.

3.In the Himalayas these soils experience denudation and are acidic with low humus.

Loamy means mixture of sand , silt and clay.

Denudation means washing / removing the Earth's surface by natural agents like water , wind, ice and gravity. Under denudation there are 4 main processes they are : weathering, Erosion, Transportaion, Deposition.

SOIL EROSION AND SOIL CONSERVATION

SOIL EROSION : The denudation of the soil cover and subsequent washing down is described as soil erosion.

The process of soil formation and soil erosion are carried out simultaneously and it maintains a balance between the two, but at times this balance gets disturbed due to human activities.

GULLY EROSION :The running water cuts through the clayey soils and makes deep channels called as gullies.

Due to gully erosion the land becomes unfit for cultivation and is known as bad land.

In Chambal valley these bad lands are called as Ravines.

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SHEET EROSION : **When a thin , uniform layer of top soil is removed from the land surface by the action of rainfall and surface runoff, it is called as sheet erosion.**

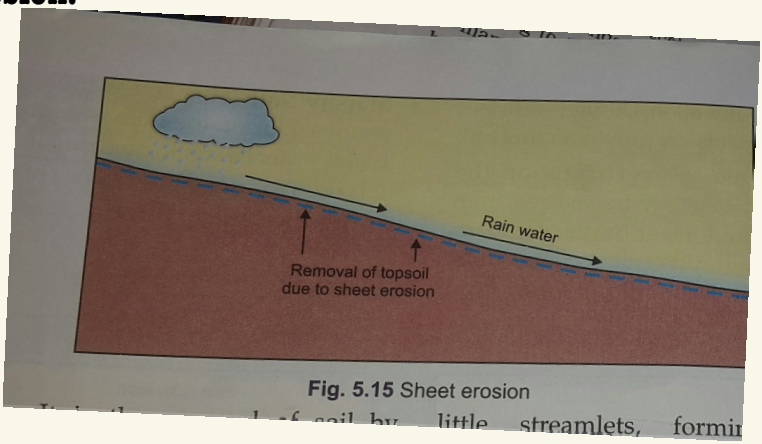

Fig. 5.15 Sheet erosion

little streamlets, formi

SOIL CONSERVATION

Contour ploughing : **Ploughing along the contour lines can decelerate the flow of water down the slopes.**

TERRACE CULTIVATION : **Steps can be cut out on the slopes making terraces to restrict erosion. Western and Central Himalayas have well developed terrace farming.**

STRIP CROPPING : **Large fields are divided into strips. Strip of grasses are left to grow between the crops to break up the force of wind. This method is called as Strip Cropping.**

SHELTER BELTS : **Planting line of trees to create shelter belts break up the force of wind and it has also contributed significantly in stabilising sand dunes in desert area.**

END

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