SOILS OF SOUTH ASIA

Definition:

Soil is the upper portion of the Earth's surface in & from which plants are able to grow".

is being a mixture of broken and decomposed pieces of rocks.

NDIA:

he soils of India are classified as follows.

1. **Residual or Locally soil.** 2. **Transported soils.**

. Residual Soil: In various mountain areas of India, due to natural processes; he small broken pieces of the surface have removed from one place to another, herefore the remaining solid materials of the earth is called the " Residual Soil ".

. Transported soils: Transported soils are those that have been carried away y the different agents from the place of origin & deposited at some distant place. This oil is also caused by many factors of nature, like, rain, rivers, glaciers and their rocess of erosion and process of Transfer. The sediments brought by these factors, ecame the fertile lands & plains. That is why this type of soil is called transported soil.

tructure of the Soils: Generally, soil consists of sand, silt and clay particles, o far the fertile soil, these contents should be necessary or vital, water content emperature, texture and gap is essential for air supply etc.

inds of Indian Soils: There are so many factors which differentiate the Indian oils from place to place, like climate, structure of the rocks, structure of the surface eight from the sea level, severe hot weather, and amount of rain etc., Therefore India as so many types of soils, which are mentioned below:

(1) Black soils

(2) Lateritic soils

(3) Red & Yellow soils

(4) Alluvial soils

(5) Desert soils

(6) Saline soils

(7) Mountain soils.

1. Black Soil:

This is a soil of dark brown color and found in many areas or regions of India, Usually because of silt addition in the soil, it becomes hard especially in the humid months which causes difficulties in ploughing. This sort of soil is found naturally in the Daccan Plateau regions, but also in the valleys of River Narmada and Tapti valley, districts Surat and Broach. Black soil is also found in the southern parts of Tamil Nadu state.

The black soil found in the Daccan Plateau has less amount of minerals and the reason of its black color is the presence of many mineral contents. This type of soil has also the contents of lime and also this soil has the ability to absorb the moisture that is why this soil is known for its fertility. The property of holding moisture, which is released to the plants, during the dry period helps the rainfed areas of Maharashtra.

The amount of moisture depends upon the depth of soil, generally there are less fertile and thin layers of soil on the slopes of mountains. There is very small amount of Phosphorus, Potassium, and Nitrogen content in this soil.

2. Lateritic Soils:

In the equatorial regions due to heavy rainfall through out the year the contents of lime and silicates flow with the rain water from one place to another and only iron and aluminum content based soil is left, this soil also has less amount of lime content. Because of greater amount of iron in soil, generally the color of soil is reddish. This type of soil is found in the eastern mountain ranges of Orissa and the southern parts of western Ghat of Malabar and Ratna Gri districts coastal areas. For the good and more yield of agricultural crops, use of natural and artificial fertilizers in necessary.

3. Soils of Red & Yellow:

These soils are usually found in the less rainy areas. The contents of lime and other minerals flow with this small amount of rain water remaining more-amount of iron contents in the soil. The color of soil is yellow or reddish. Usually this soil is found in the depressions of the plateaus. This type of soil has less amount of sand contents than clay. This soil has very little amount of phosphorus, lime and nitrogen contents.

Because of small amount of humus in these areas, cultivation is held in rainy season. For more production of agriculture, use of fertilizers is necessary. This type of soil is found in the southern part of Karnataka, Tamil Nadu, besides this, it is also found in plateaus of Bihar state and eastern Ghat areas.

Besides this in the southern parts of Mezoram and in the plateaus of shillong in which this type of soil can be found. In the valleys and, in the plain areas, this type of soil in found very deep and very fertile. On the other hand, it is less fertile and its layers are very thin on the slopes of mountains..

. Alluvial Soils:

There are so many rivers flowing from the ancient times, like plain of Satluj & Ganga in North India, plain areas of river Narmada, Tapti, Krishna, Cauvary, Godavari in the Central India came in to existence due to the fertile soil brought by them. This soil has the rich amount of silt, clay and sand contents. To cover up the deficiency of Phosphorous, Potassium and contents of Nitrogen, use of fertilizers is necessary.

The nearest areas of the rivers where supply of flood water is available are called new River soil (Alluvial soil) or Khaddar soil. The soil of ancient course of rivers is called **Bhangar Soil"** in the areas of **"Bhangar Soil"**. There we found **"Kankar Soil"** in few feet deep in the lime layers. This type of soil is being used in the cement industry at Dri (Haryana state) of India.

Due to unnecessary amount of minerals and other contents, the north western dry areas of India are facing the problem of Infertility. These type of problems are also seen in canal irrigated areas.

. Soil of Desert regions:

The areas of Rajasthan state and adjoining areas of Rajasthan like Haryana & Punjab, the desert soil plains and sand dunes are found. This type of soil is called **"Bhur".** Besides this, in some coastal areas and in some river courses, this type of soil can be seen. In the summer season due to prevailing of strong dust storms which carry five dust and leave behind bigger particles of sand, with the result that the soils west of Aravalli range is becoming more and more sandy and thus infertile.

Although, the steps have been taken, to avoid or to prevent transformation of soil from one place to another, through Planting grass and other Plants. However the amount of sand in the desert soil is greater than the amount of clay. The desert soil has only 8% amount of clay. Usually, this type of soil, is of reddish or yellow color or even light brown, the process of causes the problem of salinity erosion is usually very fast in these areas.

Due to less-amount of rains, the sediments of soil and other contents do not travel from one place to another place. In many areas, the greater amount of saline minera contents appears on the upper surface of the earth. In some areas salt is obtained from the saline water.

In some areas, the hard stone rocks mostly in Rajasthan India, are found in qu numbers. Although the nitrogen contents in the soil of deserts are less but the conten which provide food for plants are found in sufficient quantity. If the irrigation facilitie are available these desert soils can be made more productive like other plain areas.

6. Saline Soil:

This type of soil can be seen, in the Maharashtra state, Gujarat and adjoin areas Gujarat, like Ran Kuch and its coastal areas, also in the west Bengal "Sunder Bun" an its deltaic areas and coastal areas of **"Kerala"** and **"Orissa"**.

In the areas of **"Rann"** the conditions like desert areas are found. Due to th evaporation process the soil become saline. In many areas evaporation the ri amount of Saline contents can be seen. This type of soil is not suitable for cultivatio In the coastal areas of Kerala state, this type of soil is called **"Kari"**. In these coast areas, various measures have been taken to promote cultivation.

7.Mountain Soils:

In various areas of Himalayas this type of soil is found. Because due to differe altitudes the temperature vary from one place to another. Therefore, the soil of differe characteristics is found such as Brown, Podzol, etc.

(i) *Brown Forest Soils:*

In the tropical areas of Himalayas at the altitude of 900 to 1800 meters above sea leve The deciduous or ever green forests are found. Due to hot weather, decomposition vegetation in the soil is possible. This type of soil is usually very fertile.

(ii) Podzop Soils:

Those areas, which are having altitudes of 1800 to 2700 meters above sea level, a famous for thick, evergreen forests. In these areas, many contents of the soil, mo from one area to another. That is why, this soil is less fertile.

(iii) Alpine Meadow Soil:

Usually dark colored soil is found in the Alpine zone of Himalayas. Its layers are not usually deep. It consists of sand, clay contents. Due to severe cold climate, process of plants growing is possible only in spring season.

Soil Of Pakistan:

Soils of Pakistan differ from one place to another. In many areas, due to the structure of Rocks, and plants growing contents, the color and the characteristics adopt changes. Analysis of different soils of different areas is given below :

1. Soils of North Eastern Mountain Areas:

The soil found in this area has dark brown color. In the beginning its color was reddish, but due to ample rainfall abundance of natural vegetation began to grow, and due to the mixing of huge organic content its color changed from reddish to dark brown. Due to availability of high organic matters its fertility has also increased, that is why on the mountainous areas of north eastern region dense vegetation growth and natural forest are seen in abundance.

But in some valleys the transported soil brought by the glaciers has increased the fertility, and some agricultural crops are cultivated on small scale. The valley of Swat, Chitral, and Gilgit are the best examples in this behalf.

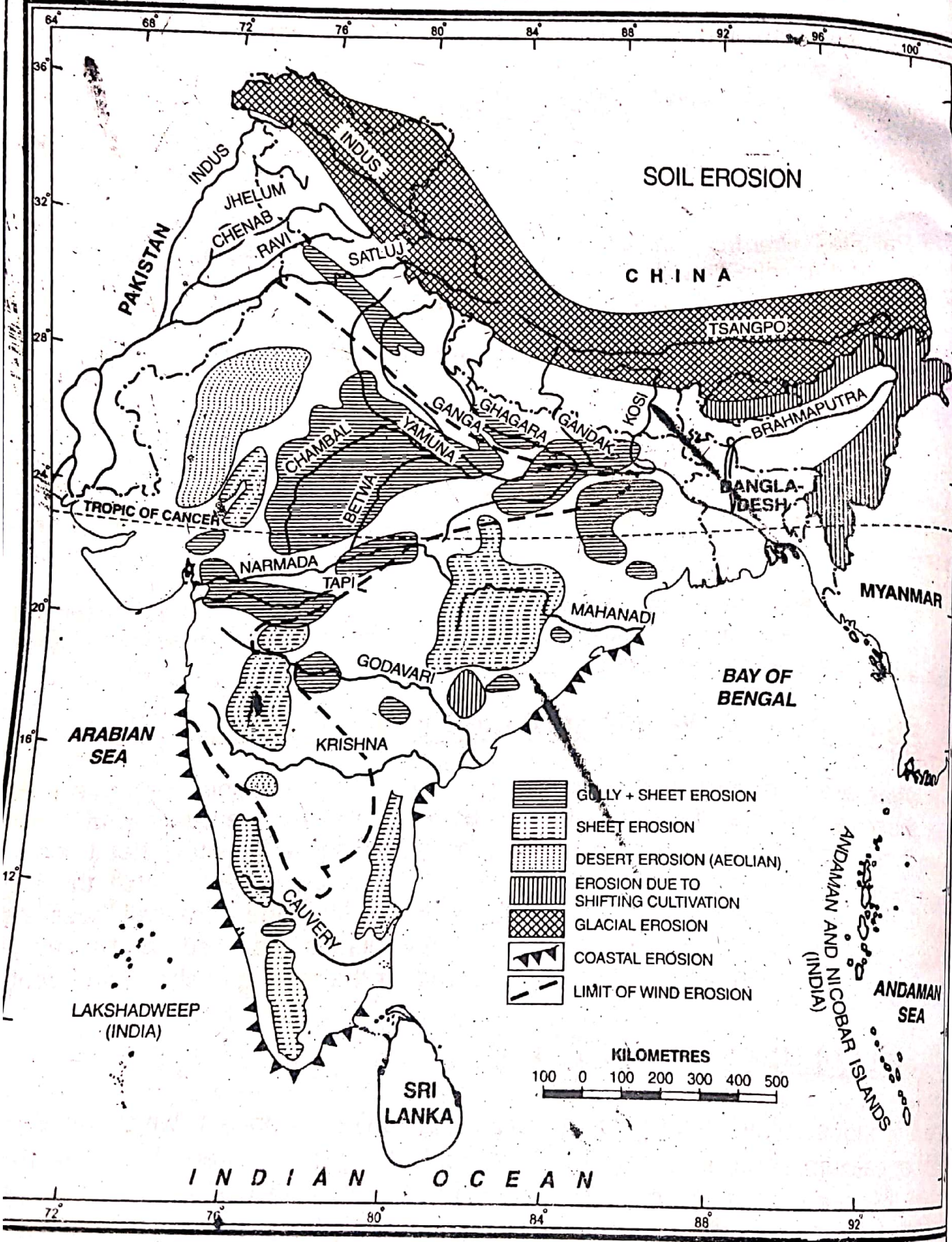
2. Soils of North Western Mountainous Region:

These areas are comparatively drier than the north eastern region. Here due to low rainfall these areas are poor in natural vegetation. Due to the scarcity of organic matters in the soil, the color of these areas soil is reddish, which show that it contains enough amount of iron, silica and lime content. so due to low rainfall the fertile elements of soil are not washed away, but due to the shortage of rainfall these areas are not suitable for agricultural activities. At a few places scattered shrubs and poor grasses are seen, which are used as pasture land for the rearing of sheep and goats.

3. Soils of upper Indus Plain:

The soil of Indus plain belong to the dry group called pedocals, which have a high content of calcium carbonate and a low content of organic matters. In Punjab the soil between the rivers consists mostly of alluvium. The old alluvium of the up-lands is called **"Bhangar"** while the new alluvium of the flood plains is called **"Khaddar"**. This soil consists mostly of loams and the latter of sand or silt. Thus the upper Indus Plain can also be sub-divided according to the major groups of soils.

Soil of South Asia



4. Soils of Piedmont Regions:

These areas include the soils of Attock, Rawalpindi, Jhelum, Gujarat and Sialkot districts. Near the mountains the soil is usually gravely; such a soil is also found in Potwar Plateau areas. The soil is less fertile and not suitable for agricultural activities.

5. Soils of Bhangar and Khaddar Areas:

The soils of Lahore, Gujranwala, Sargodha & Faisalabad are known as **"Khaddar Soil"** while the soils of Multan, Dera Ghazi Khan and Bahawalpur divisions are called **"Bhangar"** Both of these soils are considered as fertile; if water is available, they can become useful for cultivation.

6. Soils of Thal and Cholistan Areas:

The areas between River Indus and River Jhelum is known as Thal and Cholistan desert lies in Bahawalpur region, here the soil is largely sandy which has been deposited by the action of wind. This soil consists of lime-stone, Phosphate, Potash and Iron content, it is considered as one of the fertile soils. Due to shortage of water these are not suitable for agricultural activities. If irrigation facilities are provided the soil can be made more productive.

Soils of Lower Indus Basin:

In terms of soils, the lower Indus plain can be sub-divided in to following groups :

1. Soils of western areas of river Indus:

The soils found in the north west of river Indus, consist of, besides lime stone enough quantity of silt and clay. These soils are suitable for rice cultivation.

2. Soils of south eastern areas of river Indus:

The soils of this area consists of silt and sand, but after the availability of irrigation facilities. it has become more fertile and is considered suitable for the cultivation of cotton, sugarcane & wheat etc.

3. Soils of Nara and Tharparker Desert:

The soils of these areas consists mostly of sand dunes, having yellow color. Although these soils are fertile, yet due to acute shortage of water, they are not suitable for agricultural purposes.

Soils of Indus Delta:

Saline, loamy soil cover most of the delta; clayey soils have also developed under flood water conditions, covering about one third of the area, with irrigation facilities these soils are being used for the cultivation of rice.

Soils of Balochistan Plateau:

In Balochistan the soil generally consists of wind blown deposits known as loess or loess mixed with alluvium. Though the soil is fertile, agriculture is not possible without irrigation facilities.

Soils of Bangladesh:

There are *different physical features* in various areas of Bangladesh, Due to this *various types of soil is found in Bangladesh.*

1. Soils of Mountain Areas:

The areas of Chittagang, Tripura, Silhet, and the mountains of Chittagang are those areas which are considered the mountain areas of Bangladesh, due to their high altitudes. These areas almost cover the area of about 1149 sq. miles. Due to heavy rains in these areas, the soft contents of the soil shifted from one place to another place. However, due to more plants growing contents in the soil, the color of soil has become blackish.

2. Areas of Red color Soil:

In the areas of Madhopur forest and Lal Mati mountain areas, the red color soil is found. These red color soil areas cover almost about 4248 sq. miles Madhopur forest area is called as ***"Lal Mati".*** *In this red color soil, the amount of sand contents in more and the amount of lime, phosphorus, potash and other contents are less.*

Alluvial soils:

ept the forests of Sundar bun, most other areas came in existence due to the rivers the sediments brought by them. These type of areas cover almost about 41250 sq. s. The rivers of these areas brought fertile layers of soil every year. And some these rivers brought sand layers which they put down on the fertile soil, due to activity the land of these areas become infertile, but after one year these rivers up these sand layers, towards other place; than the original fertile soil becomes for cultivation. Therefore the soils of Bangladesh can be sub divided as such.

Sand Soils: Many great rivers of Bangladesh like Ganga, Barhamputara, Meghna brings the courses of rivers large amount of clay, silt & sand contents, but near the river passages. Sand is found great amount, however this soil has less amount of other contents. These big sand dunes are known as **"Bali".**

Loamy Soils: In most areas of Bangladesh loamy is sand deposited in shape of dunes soil is found but it differs slightly in terms of places, for example in some areas clayey soil is found more. Therefore the characteristics of soil are different from place to place for example loamy soil is considered good for the rice production, and for the cultivation of **"Jute"** the loamy soil with great amount of silt contents is considered more suitable.

Clayey Soils: There are so many areas which have the soil with great amount of clay contents. However if the other contents or materials are available than the fertility can be increased. Being less porous, the clayey soil is very useful for rice crop. In the **"Baqar Ganj"** district of Bangladesh almost one foot deep layer is found, that is why the rice crop is being cultivated. This soil is less useful for other crops, such as sugarcane etc.

Marshy Soils: In the Khulna district of Bangladesh near the coasts almost 2316 sq. miles broad these Marshy areas are found. In these areas, rivers flow in the shape of branches. The waves of sea also bring sediments in these areas. Due to the sea water in different areas soil has become saline. The forest of Sunder Bun is situated in this area.

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