PENANG SANGAM HIGH SCHOOL

YEAR 13 GEOGRAPHY SUB - STRAND: VEGETATION

WEEK 8

Effects of Fluvial Erosion

i. Fertility of the top soil will be lost .
ii. Nutrient content will decline as they are washed away by erosion.
iii. Underground water level will decline.
iv. Loss of vegetation and habitat.
Drought and flood become frequent.
v. Rivers get dried up

Main causes of soil erosion

- Poor agriculture practices such as ploughing frequently done on the land, finally soil too poor to support cultivated plants.
- Exposing soil on slopes.
- Overgrazing.
- Altering or development on the streams, rivers cause bank erosion.
- Vegetation removal increases the rate of water discharges more flooding occurs.

Consequences

- This has resulted in the loss of productive soil from crop and grazing land.

4. **Shifting Cultivation**

- Is the type of farming that involves planting in a piece of land after harvesting the land is left idle moves to another plot leaving the uncultivated land for a period of time.
- The type of farming associated to this is slash and burn.
- Usually practised in North – Eastern states of India.

Consequences

i. This major deforestation, environmental pollution, loss of habitat for wild animals. the burning of forest results in soil erosion and gradual degradation of soil.

5. **Soil Acidification**

- Is the increase in the ratio of hydrogen ions in composition to 'basic' ions within the soil.
- The ration is expressed in as pH on a scale of 0 – 14 with 7 being neutral. The pH of the of a soil can have major effects on plant growth, as various nutrients become unavailable for plant use at different pH levels.

6. **Salinity**

- This occurs when salt water enters the land, the soil becomes saline.
- Also soil will become saline or alkaline inflow rainfall areas. For example, Rajasthan.
- If the soil contains salt, it will spread to the whole land.
- Basically because water will transport the salt all over the place.
- Salinity becomes a problem when enough salts accumulate in the roots zone to negatively affect plant growth.
- Excess salts in the root zone hinder plant roots when trying to withdraw water from surrounding soil.

Impact of climate change on Soil

Firstly, when plant photosynthesis they draw carbon out of the atmosphere. Too much carbon in the atmosphere is also problematic to the environment. The soil also assists in drawing carbon from the atmosphere through the plants and stored in the soil until and unless it is dug then the carbon will be released back into the atmosphere. Vegetation takes in carbon and some of it is transported down to the roots and released into the soil naturally. For instance grassland is where carbon is mostly stored right into the soil. If the grassland is dug then the carbon in the soil will be released into the atmosphere again.

Ways carbon exists in the atmosphere

Natural activities – Decaying of organic matter releases carbon into the atmosphere, for instance a branch or dead frog automatically releases carbon in the process of decaying.

Also melting of ice from the two Polar Regions (North and South) releases carbon dioxide into the atmosphere.

Human activities – greenhouse effects, deforestation are the two main human actions that contribute to more carbon in the atmosphere.

Remember!! too much carbon in the atmosphere in not good for our planet earth at all and even all living things.

Agriculture and forestry to keep the carbon underground.

Soil is also a carbon sink but we can change that to be a source of carbon emission into the atmosphere if we do not control the way we utilise the land.

1. On farmland, ploughing the soil is known to speed up the rate decomposition and mineralisation of organic matter, thus carbon could be released faster in this manner.

2. Tilling or tillage of the soil, farming with complex crop-rotations, so – called "cover crops" and leaving residues on the surface of the soil should be reduced.

3. Using of permeable soils prevents heat wave from occurring that would hugely affect the climate.

How climate affect soil

Overall climate change affects soil intensively due to scarce rain or heavy rainfall; this would lead to destruction of the soil structure leading to excessive surface runoffs and infiltration. The soil need sufficient amount of water not less nor too much. Otherwise this would enhance soil erosion, acidification, salinization, soil structure destruction, compaction and biological degradation and loss of bio ecosystem.

Activity

1. Identify two possible effect of soil erosion. _____

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2. Describe two possible cause of soil erosion. _____

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3. Explain shifting cultivation and provide with an example. _____

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4. Briefly explain the cause of salinity in soil and how it affects plant growth. _____

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5. Define Carbon sink and provide an example. _____

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6. Elaborate on the impact of intense tilting on the land. _____

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