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WORKSHEET 9

School: Ba Sangam College

Name: _____

Subject: Geography

Year: 13

Strand	GEO 1 Physical Geography
Sub strand	GEO 13.1.4 Soil
Content Learning Outcome	Explore the importance of soil, its management and sustainability

CLIMATE CHANGE ON SOIL

When it comes to carbon storage, not all soils are equal. The most carbon-rich soils are peat lands, mostly found in northern Europe, the UK and Ireland. Grassland soils also store a lot of carbon per hectare. In contrast, the soil in warm and dry areas in southern Europe contains less carbon.

Climate change puts soil under pressure

- In some parts of Europe, higher temperatures may lead to more vegetation growth and more carbon stored in the soil.
- In other areas, the carbon-containing organic matter in stable peat lands is prevented from decomposing due to the low levels of oxygen in the water.
- If such areas dry out, the organic matter can quickly break down, releasing carbon dioxide (CO₂) into the atmosphere.

Agriculture and forestry to keep the carbon underground

Climate change will have a huge effect on the function soil performs such as either the raindrops or heavy rainfall, it will destruct the soil structure leading to excessive surface run-off and infiltration to occur. Thus, this will further enhance soil erosion, acidification, salinization, soil structure, compaction and biological degradation and loss of bio ecosystem.

SOIL CONSERVATION

Numerous methods of traditional and modern soil conservation

Many different techniques are there to preserve the nutrient level of the soil and prevent erosion.

Methods	Importance/ description
Mulching	-Mulch insulates the soil helping to provide a buffer from heat and cold temperatures. -Mulch prevents soil compaction. - Mulch reduces lawn mower damage
Composting	-Reduction in garbage volume\ -Improves soil aeration and drainage. - Helps control weeds. - Decreases the need for costly watering.
Contour Ploughing	-contour lines create a water break which reduces the formation of rills and gullies during times of heavy water run-off. -- In contour ploughing, the ruts made by the plough run perpendicular rather than parallel to slopes, generally resulting in furrows that curve around the land and are level - This method is also known for preventing tillage erosion
Terrace Farming	-- is a method of carving multiple, flat leveled areas into hills
Agroforestry	Agroforestry is the intentional integration of trees and shrubs into crops and animal farming systems to create environmental, economic and social benefits
Silvopasture	combines trees with livestock and their forages on one piece of land.
Cover crops	-is a crop planted primarily to manage soil erosion, soil fertility. -Weed control of winter annuals • Reduce erosion • Increase earthworm populations
Alley Cropping	-Improved soil health. -Improved crop health
Forest Farming	-Forest farming operations grow food, herbal, botanical, or decorative -provide shade levels and habitat
Riparian Forest Buffers	-Riparian forest buffers are natural or re-established areas along rivers and streams made up of trees, shrubs, and grasses.
Woody crop plantations	-Woody crop plantations are larger areas of trees or shrubs often planted in block.
Green Manures	Green manures are a few different crops that can be grown, not for produce or food usage, but grown in order to fertilize the farm land on which it grows.

Essay Writing

With reference to specific case studies, discuss two ways that global warming affects soil and vegetation and examine two ways to reduce global warming.