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LAND AS RESOURCE

- The most important natural resource, upon which all human activity is based since time immemorial, is land.
- Land resource is our basic resource.
- Throughout history, we have drawn most of our sustenance and much of our fuel, clothing and shelter from the land.
- It is useful to us as a source of food, as a place to live, work and play. It is a productive economic factor in agriculture, forestry, grazing, fishing and mining.
- It is considered as a foundation of social prestige and is the basis of wealth and political power





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LAND DEGRADATION

- Man's progress towards development has, however, considerably damaged our land resource base, probably since the dawn of civilization.
- Out of the total land area, as many as 175 million hectares suffer from degradation.
- Land degradation is caused largely by soil erosion, but also by water logging and excessive salinity.
- The most serious threat to the land is posed by deforestation.





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SOIL EROSION

- The **top soil** is precious to all living beings.
- The top soil is being continuously eroded by the different natural agents like air and water
- Accelerated erosion is due to overgrazing, deforestation, mining
- Two types of agents cause soil erosion: water and Wind





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WATER INDUCED EROSION

- ♣ Sheet erosion
- ♣ Rill erosion
- ♣ Gullies or gully erosion
- Slip erosion
- Stream bank erosion





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RILL EROSION





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GULLIES ARE LARGER THAN RILLS AND CANNOT BE FIXED BY TILLAGE. GULLY EROSION IS AN ADVANCED STAGE OF RILL EROSION, JUST AS RILLS ARE OFTEN THE RESULT OF SHEET EROSION.



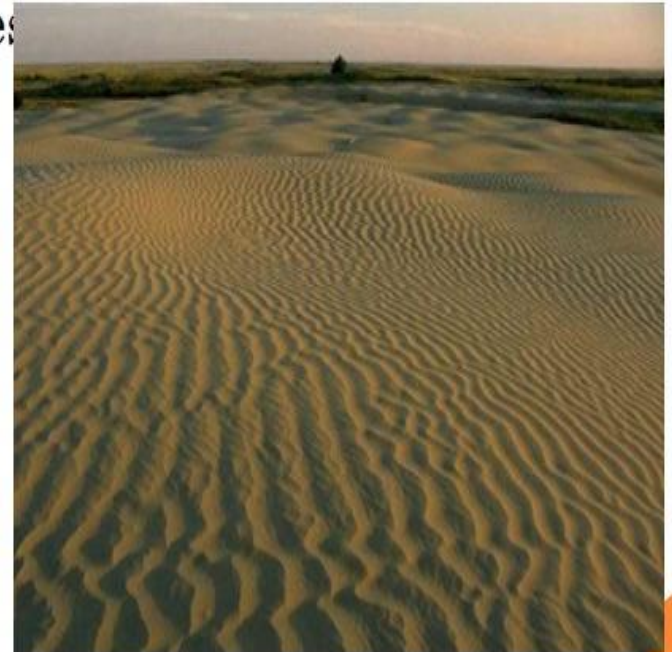


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WIND EROSION

- Wind erosion, unlike water, cannot be divided into such distinct types. Surface texture is the best key to wind erosion hazard potential.
- Its responsible for 3 types of soil movements
- SALTATION
- SUSPENSION
- SURFACE CREEP





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SOIL CONSERVATION PRACTICES

- Following types of practices are employed
- Conservational till farming
- Contour farming
- Terracing
- Strip cropping
- Alley cropping

- Wind breaks or shelter belts





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CONSERVATIONAL TILL FARMING

- **Tillage** is the agricultural preparation of the soil by mechanical agitation of various types, such as digging, stirring, and overturning.
- Examples of human-powered **tilling** methods using hand tools include shoveling, picking, mattock work, hoeing, and raking.
- Examples of draft-animal-powered or mechanized work include





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CONTOUR FARMING

- On gentle slopes horizontal rows of plants
- Helps slow down run off





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TERRACING

- Done on steep slopes
- Extremely efficient to prevent run off.
- Good in high rainfall areas





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STRIP CROPPING

- Alternate strips of crops with grasses or grass legume mixture
- Run off is retained by strip cover
- Also helps nitrogen fixing





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ALLEY CROPPING





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SHELTER BELTS OR WIND BREAKS





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WATER LOGGING AND SALINITY

- Result of excessive irrigation
- Pore spaces filled with water
- Roots cannot breath
- Make continuous column with water
- When evaporates leaves behind a white crust of salt
- Extremely high sodium quantity.

- Precious LAND RESOURCE IS WASTED





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LANDSLIDES

- In this huge masses of land slide down destroying anything in its path.
- Various developmental activities like large dams, reservoirs, construction of roads etc require large scale deforestation.
- This increases chances of landslides



mudflow

earthflow





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DESERTIFICATION

- Process of conversion of productive land to arid or semi arid lands
- 10-25% drop in productivity in moderate desertification
- More than 50% in serious desertification
- Creates gullies or sand dunes
- Leads to depletion of ground water, salinization
- Causes are deforestation, overgrazing and mining
- Areas include Saharan Africa, Middle East, Western Asia, parts of central and south America.