

- Cover crop establishment: - crops planted to cover the farm land the control of soil erosion, weed and moisture conservation



c) Physical Measures

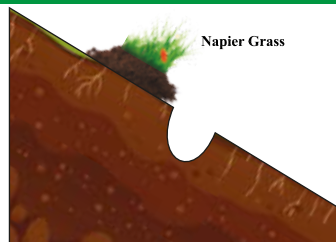
- Retention Ditches: - For intercepting and retaining the surface run off water for slow infiltration into the soil hence controlling soil erosion in the farmland below the structures.



- Cut Off drains: - It intercepts, retains and allows for slow and safe release of excess run off water to the natural water ways hence controlling soil erosion in the farmland below the structures.



- Artificial water ways: - Is a structure constructed to safely carry away excess run off water from the soil conservation structures and roads mitre drains for safe disposal.
- Converse (Fanya Juu) terraces: - Is a soil conservation structures constructed in the farmland below the cut off drain or retention ditch to intercept run off water and controls soil erosion. It suitable for slopes above 7%.



- Fanya Chini terraces: - Is a soil conservation structures constructed in the farmland below the cut off drain or retention ditch to intercept run off water and controls soil erosion. It is suitable for slopes of 3% and below.
- Bench terraces: - These are benches which form on the farmland after a prolonged use of fanya juu terraces.



Bench Terraces (sketch by Burton Holmes from Ewing Galloway)

- Stone terraces/lines/bunds: - used where farmland is stony. The stones are collected and arranged along well marked contour lines to form terraces



- Check dams: - used in the control soil erosion within artificial and natural water ways.

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SOIL AND WATER CONSERVATION

What is Soil and Water Conservation?

It is the use of certain measures to control the amount of topsoil and runoff water lost from farmlands and land scapes.

Benefits of Soil and Water Conservation

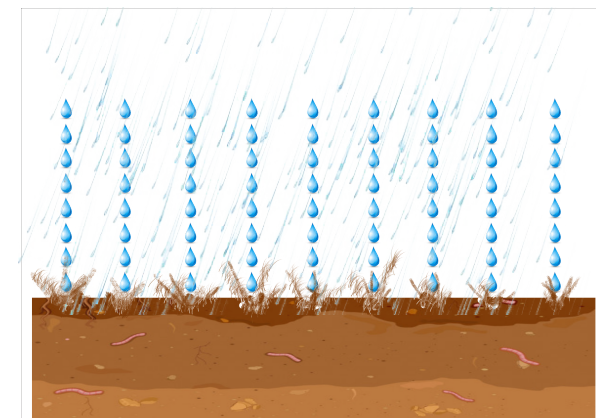
- Conserving water makes it available for crops, livestock and domestic use over a longer period.
- Controlling soil erosion improves crop and pasture yields.
- Conservation measures improve the supply of fuel and forest products and biodiversity.
- The measures of soil and water conservation improves the value of land.
- Terraces make cultivating steep slopes easier.
- More and better livestock fodder is available.

What is Soil Erosion?

Loss of topsoil through surface run-off and wind.

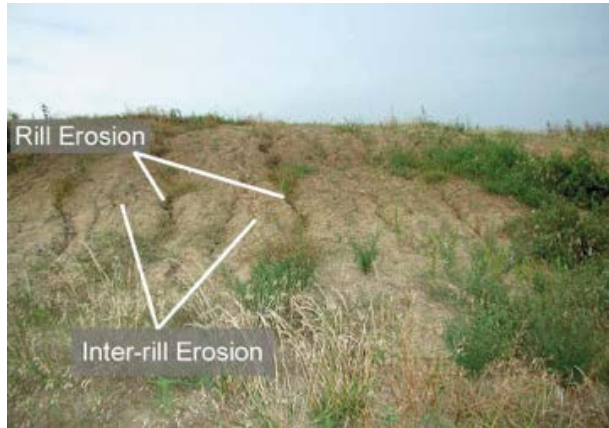
Types of Soil Erosion

- Splash/raindrop erosion



ii. Sheet erosion: - is a collection of water from rain drops that form pools which flow on the soil surface. The pools move along with soil particles and can only be noticed in the colour of the water.

iii. Rill erosion: - these are channels formed by pools of water which come together to flow on the soil surface.



Rill erosion (Image by M. Mamo, Labels added by UNL)

iv. Gully erosion



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Types of Soil and Water Conservation Measures

a) Cultural Measures

• Contour farming: - this is done by encouraging farmers to do their farming activities (ploughing, planting and weeding) along the contour lines/across the slope.

• Mulching: - done by spreading plant residue or mulching sheet on the bare land surface for control of soil erosion, weeds and moisture conservation.



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Mulching

b) Biological Measures

• Grass strips: - by planting strips of grass at certain intervals along the contours/across the slope of the farm



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Grass strip (Photo by Stephen Akoto, V.I Agroforestry)

• Strip cropping: - Done by planting different types of crops alternating at certain intervals.



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• Trash line: - Done by collecting and arranging plant residues along contour lines at certain intervals within the farmland. The trashes make the areas along the trash line very fertile hence farmers tend to break them.



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Trash line (Photo by Stephen Akoto, V.I Agroforestry)

• Strips of Agroforestry Trees: - Agroforestry trees planted alongside other soil conservation structures for reinforcement



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