

TERRACES



Terraces on a hillside



A farmer standing at her terrace wall

also called:	used in:	
• benches	gardens	✓
	fields	✓
	grazing land	

A terrace is a level strip of soil built along the contour of a slope and supported by an earth or stone bund. Terraces create flat planting areas and stabilize slopes which would otherwise be too steep for crop production. A series of terraces creates a step-like effect which slows down runoff, increases the infiltration of water into the soil, and helps control soil erosion. Terraces are built on steeper slopes, so there is a high risk of erosion taking place if they are not constructed correctly. To avoid erosion, each terrace must overflow sideways into a drain that is protected with rocks, branches or gabions.

Soil	Slope	Rainfall	Tools & Equipment
Any soil, although there is need for caution in highly erodible soils, and in clay soils (which are prone to water-logging).	10-40%	Enough rainfall to grow crops.	different size stones (flat or angular stones are best)* wheelbarrow* spade* A-frame/line level* stakes/pegs and string* hammer and chisel pick-axe *essential

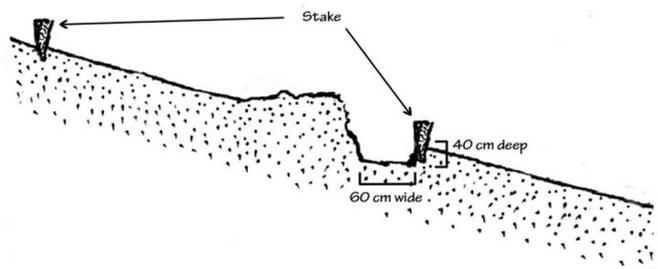


METHOD

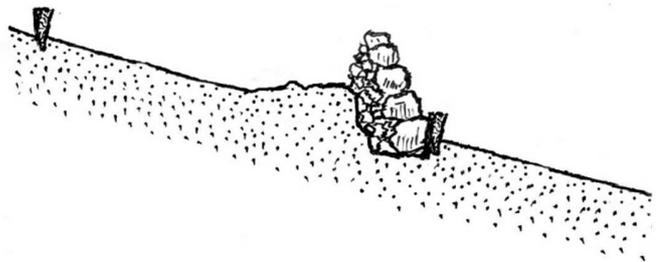
1. Calculate the slope to work out the spacing between terraces (see Table 1). Start at the bottom of the slope. Mark out the contour lines for each terrace you plan to build. If necessary, adjust the position of the pegs so that each line forms a smooth curve.



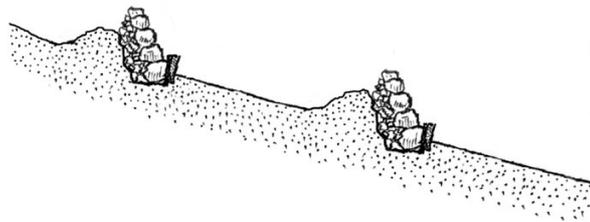
2. Dig a trench about 40 cm deep and 60 cm wide along the first contour line (see Table 1). Place the soil upslope of the trench.



3. Start building the terrace wall by putting large stones at the base of the trench. Put the biggest stones on the down-slope side to create an "anchor line" and put smaller stones on the up-slope side. Use small stones to fill gaps between the large stones. Pack the stones so that they lean back against the soil, so that the wall stays stable.



4. Move to the next contour and build the next terrace wall by repeating steps 2 and 3.



5. Level the soil excavated from the terrace foundation up against the back of the constructed wall. If you need more soil dig away the upper part of the terrace and spread it across. Make sure you don't dig more than 30 cm near to the upper wall, so that you do not undermine the foundation.



6. Use an A-frame and a rake to get the soil level. You will now have two terrace walls and a level terrace of soil between the walls. The final soil surface must be at least 10 cm lower than the terrace wall so that erosion does not take place.

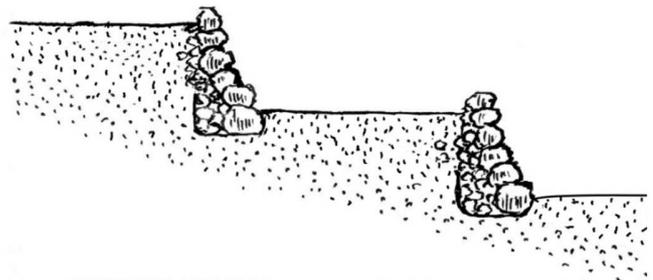


Table 1: Terrace spacing and dimensions

Slope		Distance between terraces (meters)	Terrace height above ground level (meters)	Terrace height above bottom of trench (meters)
Percent	Ratio			
10%	1:10	8.0	0.8	1.2
15%	1:6.7	5.3	0.8	1.2
20%	1:5	4.0	0.8	1.2
25%	1:4	3.2	0.8	1.2
30%	1:3.3	2.7	0.8	1.2
35%	1:2.8	2.3	0.8	1.2
40%	1:2.5	2.0	0.8	1.2

EROSION PROTECTION

During heavy rain, excess water must be able to flow out the side of the terrace. Because there is a high risk of erosion at this overflow point, it is necessary to protect the overflow with small rocks and/or grass. The water which overflows will move down a natural drainage line which, because of the steep slopes, may also need erosion protection (e.g. rock packs or brushwood walls) to avoid gullies forming.

