

Specialized Garden Designs

Gardening on steep slopes



Photo by Elin DUBY



Photo by Good Life Permaculture



Gardening on steep slopes

LEARNING OBJECTIVE

Gardeners will observe how water can remove topsoil from steep slopes and discuss how terracing can help.

MATERIALS NEEDED

- Flipchart and markers
- A jug or jerry can of water for the demonstration
- Local tools such as hoes, axes, and spades
- Two pieces of wood exactly the same size for every A-frame created (recommended 1 m)
- One piece of wood half the size of the longer two pieces for every A-frame created (recommended 50 cm)
- String
- Nails
- Hammer
- Pen or pencil
- Fist-sized rocks

DURATION



KEY CONCEPTS

- Gardeners who plant on steep slopes face problems with severe erosion. Erosion carries away nutrient-rich topsoil through rain and wind, leaving behind poorer quality subsoil.
- Gardeners have used terracing for centuries, but terracing can be made more effective by placing the terrace along the contours of a landscape and by reinforcing the outer wall of a terrace with thick grasses.

TRAINING AGENDA

1	Understanding terracing	 PRACTICAL ACTIVITY	1 hour
2	Using contours to build effective terraces	 PRACTICAL ACTIVITY	1.5 hours

1. Understanding terracing

PRACTICAL ACTIVITY

GOAL OF ACTIVITY: Gardeners share knowledge of terracing techniques using a soil mound that helps them visually understand.

FACILITATOR PREPARATION: In advance, prepare a soil mound. The soil mound should be at least 50 cm high and wide.

MATERIALS NEEDED: A jug or jerry can of water for the demonstration

STEP 1. Explain to gardeners that the session is about sharing knowledge around terracing techniques. Gather gardeners around the soil mound and ask them to gather sticks and put them on the mound to represent plants.

STEP 2. Ask gardeners what happens to soil on slopes when it rains. After gardeners give their answers, pour a jug or jerry can of water over the mound and observe what happens. Ask gardeners to share their observations.

STEP 3. Ask gardeners how they would address this problem. If they live in an area with steep slopes they are likely to have knowledge of terracing techniques. Ask gardeners to demonstrate terrace building on the soil mound and explain what they are doing and why.

STEP 4. Pour water over the terraced soil mound and ask gardeners to observe what happens and share their observations.

STEP 5. Ask gardeners to summarise key points about terracing and write them on a flipchart. Elicit any key points that gardeners may have missed.

STEP 6. Demonstrate step by step how to build a terrace by building a mini terrace on the soil mound. Point out key points as you go along.



2. Using contours to build effective terraces

PRACTICAL ACTIVITY

GOAL OF ACTIVITY: Gardeners learn how to use contours to improve their terrace building.

FACILITATOR PREPARATION: Identify a slope on which to mark out contour lines. Review the Key Messages about contour lines in Establishing Your Garden before the session.

MATERIALS NEEDED:

- Two pieces of wood exactly the same size for every A-frame created (recommended 1 m)
- One piece of wood half the size of the longer two pieces for every A-frame created (recommended 50 cm)
- String
- Nails
- Hammer
- Pen or pencil
- Fist-sized rocks

- STEP 1.** Gather gardeners at a site with a steep slope where they may practice marking out contour lines.
- STEP 2.** Demonstrate to gardeners how to build an A-frame.
- STEP 3.** Have gardeners mark out a few contour lines where they may start digging a terrace. Contour lines should be marked out 10–12 meters upslope or downslope from each other to allow enough space for each terrace.
- STEP 4.** Gardeners do not have to dig each terrace to completion, but make sure participants understand how terrace building would proceed after marking out contour lines.



HOW TO BUILD A TERRACE

1. Use an A-frame to mark out the contours of a slope.
2. One meter deep trenches are formed along the contours of a slope. Soil from these trenches is thrown upward to form banks along the edge of the upper terrace.
3. Terraces should be made level as much as possible.
4. Trenches can be dug every 10–20 m to form a new terrace.
5. Over time, the banks on the outer edges of the terrace will even out. They can be planted with grasses to prevent downward erosion. It is best to plant thick grasses that can be used as animal fodder. One example is vetiver grass, which has very deep roots. Bananas or yams can be planted in the trenches of the terraces where water will collect. Trees along the sides of the terrace will further prevent erosion.
6. Terraces must be maintained by throwing soil back onto the uphill terrace as necessary.

