

Contour planting is a planting strategy for sloping fields, where crop rows follow slope contours rather than planting in rows up and down-slope. The primary aim of this strategy is to slow the downhill flow of water and encourage the infiltration of water into the soil. Slowing the flow of runoff water reduces soil erosion and therefore also nutrient loss.

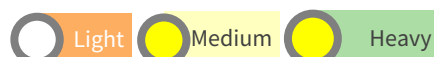
Contour Ridges are created by tilling, ploughing or hoeing soil to establish ridges along contour lines, acting as a barrier to downhill water runoff and other erosive processes - the higher the ridge height, the more effective the barrier is to preventing soil erosion. **Contour Strips** involves use of vegetative barriers e.g. planting of strips of grass or hedges and other species to secure soil and further prevent erosion. These practices are labour intense and require extension support, especially as contour lines are not straight but follow slope characteristics, correctly identifying contour lines is important and can be done using the 'low-technology' options that are identified in the Technical Application section of this Technical Brief.

MOST SUITABLE AGRO-ECOLOGICAL CONDITIONS

Value chain



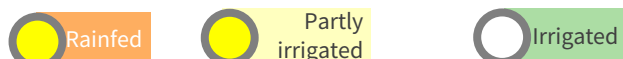
Soil texture



Climatic zone



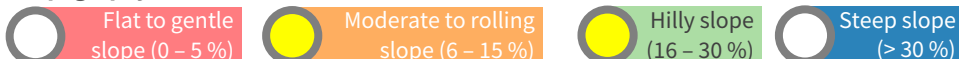
Water source



Annual average rainfall (mm)



Topography



MOST APPROPRIATE CONDITIONS AND REQUIRED INPUTS

Farming system

Does it require collective action



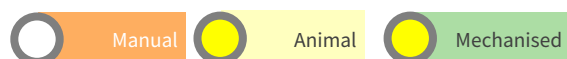
Characteristics



Farm size (ha)

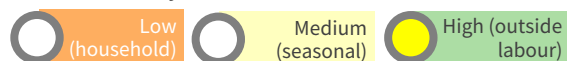


Mechanisation



Human resources

Labour intensity - level of effort

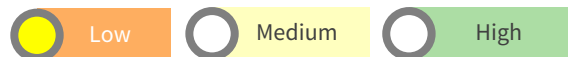


Gender/youth smart (low investment/low labour requirements)

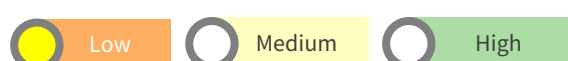


Financial resources

Initial investment



Maintenance Costs



Access to finance capital or credit required



Enabling Environment

Extension support



Access to inputs



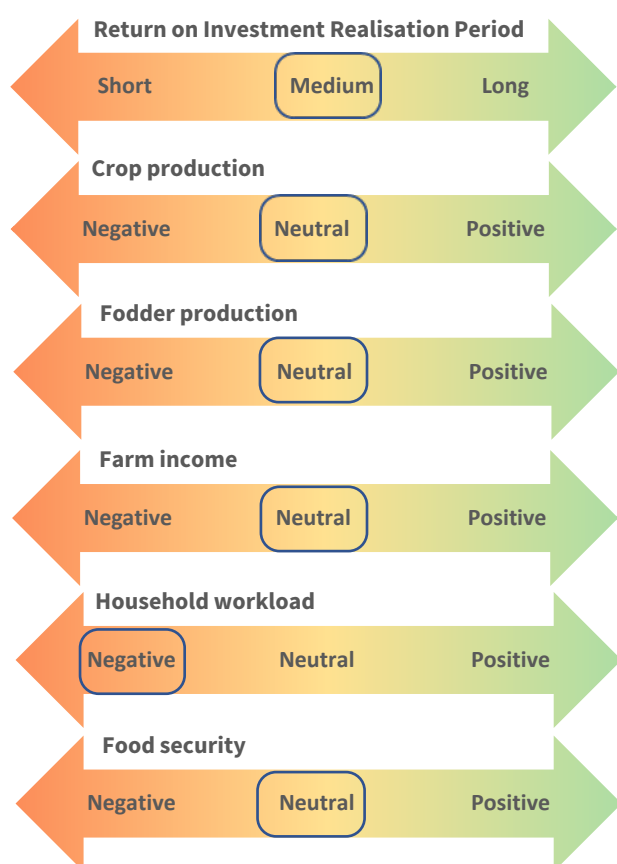
Market access



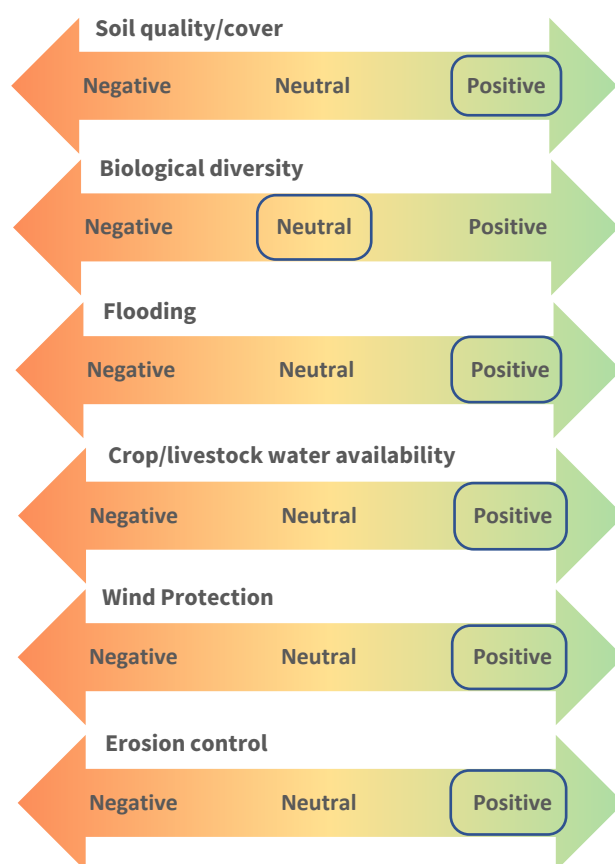
The purpose of this technical brief is to guide where this **practice, technology or strategy** could be applied. It may be applicable in other circumstances, but this brief focuses on where it is possibly **most suitable**. Content is general, and should be contextualised depending upon locality. The brief provides an overview, details of appropriate agroecological characteristics, appropriate conditions and inputs, possible outcomes and impacts, how the **practice, technology or strategy** should be applied, potential benefits and drawbacks, and provides suggestions for further reading in terms of CCARDESA materials and other sources, including those used to develop this technical brief.

POSSIBLE IMPACT/OUTCOMES

Socio-Economic Impacts Positive or Negative



Ecological Impacts Positive or Negative



These descriptors indicate whether the practice, technology or strategy has a positive, neutral, or negative impact or outcome. Those with no box are deemed not-applicable.

TECHNICAL APPLICATION

To effectively undertake contour planting:

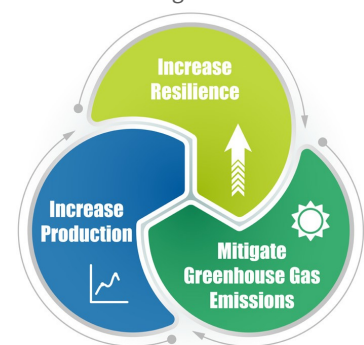
- **Step 1:** Construct an A-frame that has a plumb-line with a rock hanging down the centre. The base of the A-frame should be 90 cm. See Figure 1.
- **Step 2:** Calibrate the A-frame on flat ground. Ensure that both legs are on the ground. Mark where the plumb line meets the cross bar.
- **Step 3:** On a slope, working perpendicular to the slope, plant one leg of the A-frame and swing the other leg around until the plumb line meets the mark on the cross bar. Drive a stake into the ground where the first 'planted' leg is and continue the process across the slope.
- **Step 4:** Once the extent of the contour has been staked, tie a string from post-to-post across the slope; this identifies the contour to be planted.
- **Step 5:** Plant selected crops, develop contour ridges or plant contour strips along the contour line.
- **Step 6:** Subsequent contours should be spaced 3-5 m up or downhill of the preceding contour line. To determine the length between contour lines, measure off the top of each stake to a stake up or downhill with a tape measure or accurately measured third stick.
- **Step 7:** Contour ridges can be implemented like Water Spreading Bunds (Technical Brief 28) to form ridges of soil that are formed by tilling or ploughing and can be left after land preparation to further prevent erosive forces. Crops can be planted between these ridges.
- **Step 8:** The planting of contour strips can be implemented by planting grasses or hedges 20 m (shallow slopes) to 10 m (steeper slopes) apart up or downhill, similar to Trash Lines (Technical Brief 14). This intercropping allows for erosion control and can be used as fodder for livestock.

CLIMATE SMART AGRICULTURE OUTCOME(S)

Reflecting how this **practice, technology or strategy** contributes to Climate Smart Agriculture outcomes

Retaining soil structure enables farmers, particularly those planting on sloping fields to maintain productivity.

This land management practice aid farmers to maintain soil structure in the face of changing climates and shifting rainfall patterns.



SUMMARY/KEY ISSUES

Benefits

- Contour planting prevents erosion on sloped fields and efficiently trap runoff water.
- Contour planting improved water infiltration and contour ridges improve water retention.
- Contour planting can be integrated with intercropping contour strips of grass or hedges to help maintain soil structure.

Drawbacks

- Contour lines are extremely labour intensive and take a significant amount of time to implement.
- During contour measuring and development, land may be exposed to erosive forces.

REFERENCE MATERIAL

CCARDESA Related Content

- CCARDESA, 2019. Knowledge Product 08, Decision Tool: Climate Smart Land Preparation Options.
- CCARDESA, 2019. Technical Brief 14: Trash Lines.
- CCARDESA, 2019. Technical Brief 28: Water Spreading Bunds.

Additional Information

- The Food and Agriculture Organisation, 1992. [The Food and Agriculture Organisation. Soil and Water Conservation \(SWC\) Technologies and Agroforestry Systems](#). Rome, Italy.
- The Food and Agriculture Organisation, 2003. [Soil and Water Conservation, With a Focus on Water Harvesting and Soil Moisture Retention](#). Rome, Italy.