



CONTOUR FARMING

Climate Smart Agriculture (CSA) Brief No. 1 for Agricultural Field Officers



Contour farming at a private farm in Mardi Gras, St George

Did you know?

The simple act of planting across the slope instead of up and down the hill does two very important things: it captures at least twice the amount of rainwater and reduces soil erosion by up to eight-fold.

Challenges

The topography of the land in the tri- Island state of Grenada, Carriacou and Petite Martinique is mountainous. Farming is done on sloping land because many farmers do not have alternative sites. Because of this, soil erosion and land slips can occur, in particular after heavy rainfall events. The negative impacts of climate change are predicted to lead to changes in rainfall patterns. These changes include an increase in heavy rainfall events, higher temperatures and rates of evapotranspiration. These changes also lead to longer and more severe dry spells and concerns for water availability for agricultural purpose. This coupled with **farming on sloping lands leaves the soil much more vulnerable to erosion and land slippage**. Beside the loss of land and soil for the farmer, erosion and land slippage have negative impacts on the coastal ecosystems, where the sediments affect reefs, mangroves and seagrass beds, which are the first line of defense along the coastline against storm surges and other climate-related events.

What is contour farming?

Contour farming is the practice of growing crops on the level, across the slope rather than up and down the slope. Plants are planted in rows running across the slope and are designed to be as level as possible to facilitate planting. **By planting across the slope, the land is much more resistant to erosion by creating barriers to the free flow of water down the slope.**

The simple act of planting across the slope instead of up and down the hill does two very important things: it captures at least twice the rainwater and reduces soil erosion by up to eight times.



Farming in encased beds along the contours at The Tower Estate, St Paul's, St George



Benefits of contour farming

- ✓ Best method to prevent land slides and soil erosion when farming on hillsides;
- ✓ Suitable for both small and large scale farmers;
- ✓ Increased yield by up to 15 %;
- ✓ As it is done across the slope, the water which is flowing down takes more time to travel, more infiltration occurs hence there is more retention of water and nutrients in the soil;
- ✓ With more water retention in the soil, less irrigation is required, which is an advantage for farmers during the dry season;
- ✓ The loss of top soil is reduced during and after heavy rain events by using contour drains that can direct excess water out of the land;
- ✓ Stepped contour farming can increase farming acreage;
- ✓ This method of tillage, planting, and other farming operations performed on or near the contour of the field is most effective on slopes by 2-10%;
- ✓ It also promotes proper drainage and reduces ponding.

Disadvantages of Contour farming

- ✓ Proper contours are to be established before planting.
- ✓ It takes more time and labour to prepare the planting area.

Despite these barriers, it is still the best method for hillside farming today.



Contour farming on a private farm in Mardi Gras, St George

Implementation

To implement contour farming, construct the beds for farming along the contour with the use of an A-frame*.

This will require a:

- ✓ Topographic survey of field;
- ✓ Layout of a baseline contour with markers, using an A-frame*;
- ✓ Preparation of field borders to allow room for farm equipment to turn/maneuver;
- ✓ Plan to perform all farming activities parallel to baseline contour(s).

1. When marking a contour, the legs of the A-frame should be level when the freely hanging, vertical string is touching the mid-point 'c' (as seen in brief #7);
2. A new terrace is dug along the contour marked out by the A-frame*;
3. Mark out contours, using your judgment of the conditions to determine where to start from (bottom, top or sides)
4. Mark out the path of the A-Frame* with pieces of sticks;
5. Dig along that path and you will have a contour line;
6. Continue drawing lines down the slope and you will have several contour lines;
7. These lines can be used to make beds, drains or to plant trees or form grass barriers across the slope.

*See ICCAS CSA Brief 7 "How to build an 'A-Frame'

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