TIE AND RIDGE

CLIMATE CHANGE ADAPTATION AND RESILIENT FOOD SYSTEMS ISSUE

The sorghum-based ecosystem is characterized by low rainfall and poor soils with low moisture retention potential. Thus, the little rainwater must be conserved as much as possible so that its use by the plants can be maximized. Through this, the system can be made more resilient and its capacity to adapt to climate change can become more enhanced.

ESSENTIAL TECHNICAL INFORMATION

Tied-ridging is a technology to create ridge furrows that are blocked with soil to create basins that retain surface runoff within the field. Ridge-tillage allows for increased water infiltration and reduced runoff, as well as less evaporation resulting in more water being available to the plants.

This strategy aims at conserving rainwater in-situ where it falls within the root-zone. Increased soil moisture storage reduces runoff, which leads to increased efficiency of rainwater utilization.

Figure 8: Tie Ridge in pracice

HOW TO IMPLEMENT THE TIE AND RIDGE TECHNOLOGY

Plough the land and make planting furrows along the contour preferably with ox-drawn plough and make tied ridges. Apply well-decomposed manure and/or fertiliser in the tied ridges and slightly mix with soil. Plant the seeds in the furrows and cover the seeds lightly leaving a furrow to harvest water. Tied-ridges offer good potential for water conservation. Tying the furrows allows in-situ water harvesting with increased water infiltration into the soil and reduced runoff. Make tied-ridges after the first weeding by tying (blocking) the furrows at 4-5 m intervals or 2-3 m in more sandy soils using a hoe.

The following are key steps for tie-ridging:

i. Plough the land and make planting furrows along the contour preferably with oxen
ii. Apply well-decomposed manure and/or fertilizer in the furrows and slightly mix with soil
iii. Plant the seeds in the furrows and cover the seeds lightly leaving a furrow to harvest water
iv. Tied ridges offer good potential for water conservation
v. Tying the furrows allows in-situ water harvesting with increased water infiltration into the soil and reduced runoff
vi. Weed preferably with well-trained oxen to remove weeds and to make water harvesting furrows
vii. Make tied ridges after the 1st weeding by tying (blocking) the furrows at 4-5 m intervals or 2-3 m in more sandy soils using a hoe
viii. Tied-ridges offer good potential for water conservation
ix. Tying the furrows allows in-situ water harvesting with increased water infiltration into the soil and reduced runoff.