Compartmental bunding for rainfed black soils of the semi-arid tropics

Low yields of winter sorghum, chickpea, safflower and sunflower in the medium- to- deep black soils of the semi-arid dry region are attributed to low annual rainfall, i.e., around 500 mm and its poor distribution. This results in low soil-water availability in the soil profile from sowing to harvest. Nearly 10-20% of rainfall is also lost as runoff both prior to sowing and during the crop season.

Compartmental bunding

Generally bunds of 15-cm in height with compartment size of 10 m × 10 m in the cultivated lands with around 2% slope are formed after preliminary tillage operations during the second fortnight of June or the first fortnight of July for post-rainy (*rabi*) crops. Compartmental bunding increased yields of *kharif* (monsoon) and *rabi* (winter) crops by 5 to 35%, depending on the annual rainfall and its distribution at the Research farm of the CSWCRTI, Bellary.

The effect of bunding in increasing crop yields was higher during drought years as majority of the rainwater was conserved with the adoption of compartmental bunding as compared to the normal and above normal rainfall years. Its greater effect is observed in moisture-responsive crops/crop cultivars when they are cultivated during *rabi* season. In addition to higher yields, compartmental bunding also conserves top fertile soil. This low-cost compartmental bunding technology can be adopted by all farmers in the Vertisol (medium-to-deep black soils) regions of Akola and Sholapur districts in Maharashtra; Bijapur, Bagalkot, Gadag, Koppal, Haveri, Dharwad, Chitradurga and Bellary districts in Karnataka; Kurnool, Anantapur, Kadapa and Mehbubnagar districts in Andhra Pradesh and Dindigul district in Tamil Nadu, which fall under semi-arid region with <750 mm mean annual rainfall.

Central Soil and Water Conservation Research and Training Institute
218, Kaulagarh Road
Dehradun (Uttarakhand) 248 195
e-mail: director@cswcrtiddn.org