

MOISTURE CONSERVATION IN ARABLE LANDS

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Most of communal areas in Zimbabwe receive low rainfall and farmers in these areas do not have access to irrigation facilities. It is therefore necessary to make maximum use of available moisture. The main aim is to retain as much moisture as possible in the soil. To do this, farmers have to:

- a) Improve water infiltration
- b) Reduce runoff
- c) Increase water retention

The moisture conservation measures described below will help farmers in their fields to gain from the little rains that come during the season.

1. Early Deep Planting

- Conserves previous season's moisture.
- Increase area of water storage.
- Clods encourage water infiltration because of reduced flow of water on rough ground. Overworking the soil leads to a finely powdered, highly erodible soil.
- Plough on contour.

2. Manure and compost

- Improve soil texture for water holding capacity because of the spongy nature of humus.

3. Ridging

- Cutting lengths of slope reduces runoff on steep slopes, channels water down a slower gradient increasing contact time between water and soil and thereby enhancing infiltration.

4. Tie – Ridging

- Damming up of water to increase contact time for infiltration. This is done on crops that are planted on ridges.

5. Pot Holing

- Creating pot holes for water to settle, increasing contact time. This is done on crops that are grown on flat surface.

6. Ripping

- Shattering of the land improves infiltration. Channels left behind encourage moisture collection in the furrow.

7. Conservation Tillage

- Stover and mulch encourage water infiltration and reduce evaporation.

8. Fertility Trenches

- These encourage high moisture retention and reduce soil erodibility.

9. Cropping

- Bare soils constitute water erosion hazard.
- Plant population – the better the yield, the lower the soil loss through water erosion. It is always advisable to follow recommended plant spacings and fertilizer rates.
- Late planting reduces yields and increases soil loss.
- Very early planted crops will be harvested early enough, leaving the soil unprotected towards the end of the rainy season.