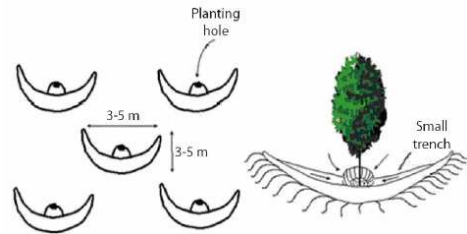


Internal Catchment Rainwater Harvesting

Earthen Bunds

Semi-circular bunds, as their name suggests, are earthen bunds in the shape of a semi-circle (see picture). For maximum efficiency, they are constructed in a staggered formation, so when the bunds in the first row are full, excess water overflows around the tips and is caught by the second row. They are constructed by digging holes along the contours of the slope and then using the excavated soil to build up a ridge on the down-slope side of the hole. Crops are then planted inside the bund, where they can benefit from the concentration of water. The dimensions of the hole and ridge vary depending on what crop is being grown within the bund.



Contour bunds consist of small embankments that are constructed along the contour lines of the slope. Water is trapped behind the embankment allowing deep infiltration into the soil. They are usually constructed out of earth or stone and the height of the embankment varies, the higher it is the larger the net storage of water.

Information and diagram on earthen bunds was taken from Ibraimo and Munguambe (2007).

Pitting

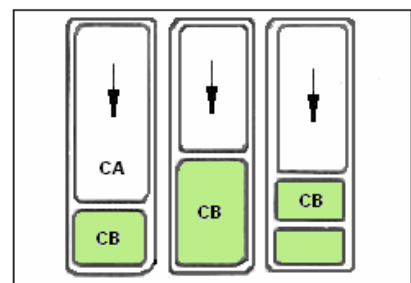


Pitting involves digging small semi-circular pits in the ground to break up the crusted soil surface. Also known as 'Zai' pits in West Africa, they are usually around 30cm in diameter and 20cm deep. Farmacyard manure is put inside to increase the concentration of water and nutrients and then seedlings are planted in the centre.

These use a similar to semi-circular earthen bunds, but differ slightly as they don't have a ridge on the down-slope side of the hole.

Meskat-Type System

This is when a field is divided into a catchment area and a cropped basin. The cropped basin is directly below and catchment area (see picture) and is enclosed in a U-shaped bund to catch the runoff, allowing it to infiltrate. To improve runoff, the vegetation can be removed from the catchment area; this can cause problems with erosion later on, so planning and maintenance is important. This method is used predominantly for cereal crops including maize, sorghum and millet.



Information and diagrams about pitting and the meskat-type system were taken from Hatibu and Mahoo (1999).