

WATER HARVESTING TECHNIQUES

In the arid lands of Africa, a lot of rainwater is lost as it falls and flows away. We can harvest a great deal of this water and store it to use when we need it.

The 2 main ways of harvesting rainwater are collecting it from roofs and collecting surface runoff—the water that flows off and when it rains.

When this water is harvested it can be used for farming and domestic activities. After water is harvested from various watersheds, it is conveyed to storage reservoirs.

1. WATER FROM HOUSE ROOFS

a) Simple roof catchments

The simplest means of harvesting and storing rainwater is to place a jerry can under a short length of gutter onto which a rope is tied.

The rope guides rain water into the jerry can without wastage.



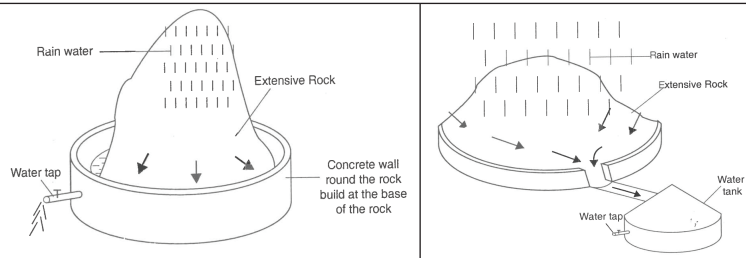
b) Roof Water Harvesting Using Plastic Tanks



3. Water from Rock Outcrops

A rock catchment is another method for harvesting surface runoff. It can be made wherever there are large rock outcrops. When rainwater falls on rock most runs off the rock. The rock catchment system catches and stores runoff water.

NB: The catchment area and reservoir must be cleaned, and cracks repaired every season.



5. USE OF WELLS

Wells are holes sunk into the ground, below water table to enable water to seep in for use. Wells are usually built to harvest water lost from the ground through seepage. It is a good supply of ground water for domestic use.



A well protected well

KEEPING WATER CLEAN

Even when we have a source of clean water, we need to keep it clean when collecting and storing it.

- Always use a container that is clean inside and out
- Do not touch the water with dirty hands
- Do not let things fall into the water
- Keep the storage container covered
- If the container does not have a tap, use a clean ladle or scoop for taking water from it

2. DAMS

A dam is a barrier constructed across a river, a dry valley or a waterway to collect and hold large volumes of water. Dams are meant to raise the water levels so as to form a reservoir or lake for storing water.

In the dry areas where streams are seasonal, dams are constructed across the river beds to form subsurface reservoirs on a rock foundation. When rain falls, sand and water collect behind the dam. When the streams dry up, the water is stored in the sand, hence preventing a lot of evaporation. Water is collected by making shallow holes in the sand to reach it



4. WATER FROM ROADS

Road runoff water is often speeding down the drain, quickly concentrating into erosion gullies taking the soils along. Instead of giving it a speeding ticket, you can also redirect the water and harvest it. Trenches, mitre-drains, cross-culverts and storage ponds can be used.



6. RAINWATER HARVESTING – USING HOOPS.

What are hoops?

These are raised earth structures (bunds) constructed as semi-circles on gently sloping land. They are made so that the tips of the bunds or hoops point up the slope and are on the same level with the contour line. The hoops capture rainwater that runs down the slope, allowing it to soak into the soil. Excess water drains around the tips, where it can be caught in more hoops further down the slope. The size of the hoops can vary from small (2 metres across) to large (60 metres across). The smaller hoops can be used to grow better crops, shrubs and trees.

The larger ones can be used to grow better grass or fodder and also help in rangeland rehabilitation.



REFERENCES

1. CTA Practical Guide Series, No. 3 Rainwater Harvesting for Increased Pasture Production
2. Erik Nissen-Petersen, (2007) Water from Roofs; A handbook for technicians and builders on survey, design, construction and maintenance of roof catchments. Danish International Development Assistance (Danida)