

The term 'harvesting' usually conjures up images of a farmer on his tractor, working in his field of mealies. But did you know we can also harvest rainwater?

Rainwater harvesting simply refers to the collection and storage of rainwater (or other forms of precipitation) for future use. Millions of people around the world, especially those living in semi-arid and arid regions (such as South Africa), lack access to good quality water for drinking, growing and preparing food. Water is also needed to provide water for animals, vegetables, crops and trees.

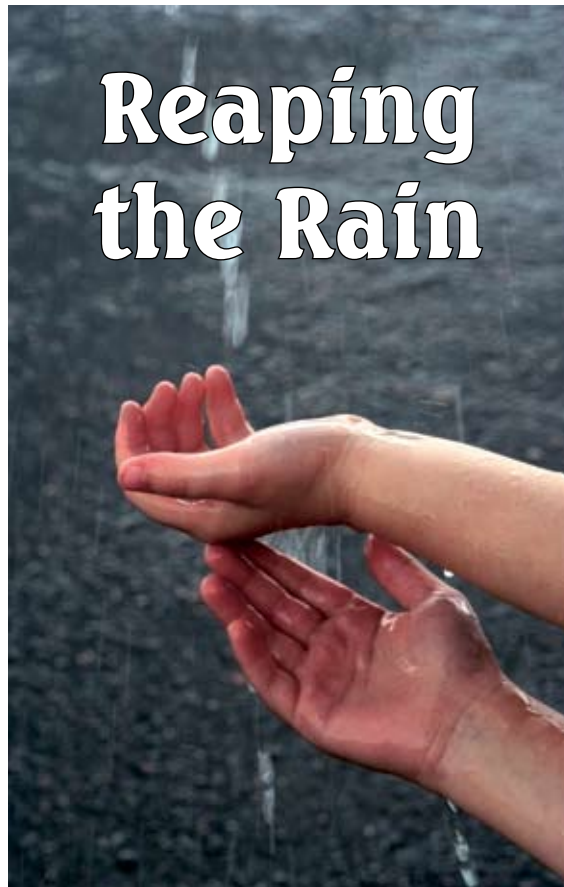
Where groundwater and surface water sources are in short supply, rainwater may be a sustainable alternative or supplement. Rainwater harvesting is practiced by many communities around the world. The practice is becoming more widespread as people realise the importance of conserving water.

## RAINWATER HARVESTING AROUND THE WORLD

There are many examples of rainwater harvesting around the world, some dating back thousands of years. Extensive rainwater harvesting apparatus existed 4 000 years ago in the Palestine and Greece, for example. In ancient Rome, residences were built with individual cisterns and paved courtyards to

### For more information:

- [http://en.wikipedia.org/wiki/Rainwater\\_harvesting](http://en.wikipedia.org/wiki/Rainwater_harvesting)
- <http://www.soilforlife.co.za/docs/biophile/Biophile%205.pdf>



## Reaping the Rain

capture rain water to augment water from cities' aqueducts.

Traditionally, in Uganda and Sri Lanka, rainwater is collected from trees using banana leaves or stems as temporary gutters. Up to 200 litres may be collected from a large tree in a single storm.

In Western Europe, the Americas and Australia, rainwater was often the primary water sources for drinking water. In all three continents it continues to be an important water source for isolated homesteads and farms. In Japan, several cities are using rainwater sources inside the city boundary to restore the original water cycle and secure water for emergencies.

Countries such as Germany have developed sophisticated rainwater harvesting systems. One such system incorporates clever computer management systems, submersible pumps, and links into the greywater and main domestic plumbing system.

## CATCHING AND STORING RAINWATER

Catching and storing rainwater from the roof of houses, schools and other buildings is the most common form of rainwater harvesting. Even a small roof can collect a lot of water during light rain.

Water is usually channelled from the roof into a gutter and then channelled into clean drums, large buckets, old baths or any kind of water collection tank (plastic tanks of different sizes can also be purchased commercially). A mesh over the top of the downpipe keeps leaves out. It is best to cover the container to reduce water loss through evaporation. To prevent mosquitoes from breeding in the water, add a few drops of cooking oil.

If a large tank is used remember that silt could enter the tank, so to make sure it does not become a problem, the tank should have its tap placed at least 50 millimetres from the bottom. It is best to raise the rain tank about 300 millimetres off the ground so that a bucket can be placed underneath it to collect the water for use.

Another idea for catching rainwater is to bend a piece of iron sheeting into a V shape



and place it on wooden poles so that it is supported at a slant. Keep it from blowing away in strong winds by securing it with wire. A drum placed at the lower edge will catch the water. Rainwater can also be collected from gutters, paved areas and driveways.

This water can be used to flush toilets, wash laundry, showering or bathing, irrigation and

livestock watering. The water may require treatment before drinking.

In a country such as South Africa where 35% of the population are vulnerable to food insecurity (meaning families often do not have enough to eat) rainwater harvesting can go a long way in contributing towards increasing household food and/or income (through the sale of vegetables, for example).



*An example of a closed reservoir used to store rainwater for food growing purposes.*



*Rainwater contributing to food schemes in many communities in South Africa.*

## GIS FOR SCHOOLS

The City of Cape Town with partner organisations is developing a hands-on geographic information systems (GIS) project for high schools based in urban nature reserves. The environmental education centres at Rondevlei and Tygerberg Nature Reserves are preparing to support GIS-based fieldwork. As part of this project, called Youth, Urban Nature & GIS, senior learners will be able to experience how nature conservationists use GIS technology to monitor and care for nature.

Learners will use hand-help global positioning system (GPS) units to locate monitoring sites and record coordinates; monitor plants, animals and the environment and record observations in a database; construct GIS layers; and display findings and digital photographs using GIS technology.

By monitoring the environment, learners will help the nature reserves to care for nature in the City of Cape Town. Schools will also have access to these records, and learners will be able to analyse data that different schools collect over months and even years. Based on the success of the project, the City plans to extend it to more nature reserves.

The Western Cape Education Department has already selected six schools to take part in the pilot project this year. In 2008, the reserves will make GIS-based fieldwork part of their senior high school programme.

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