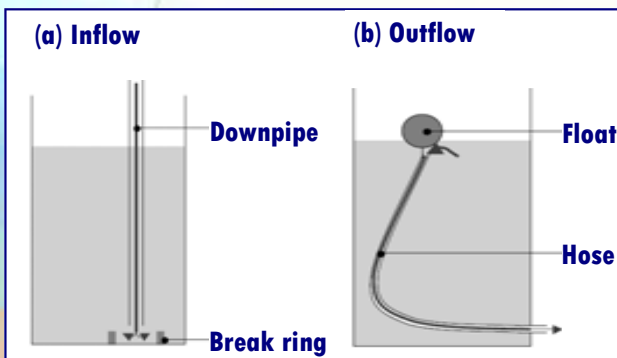


The tank must exclude sunlight to prevent algal growth.

Incoming water should be separated from the stored water by a down-pipe that descends to near the bottom of the tank. This minimizes disturbance of fine sediment that may have accumulated at the tank bottom. To extract the cleanest top layer of water, a flexible intake hose attached to a float is recommended.

The following diagrams illustrate installations of inflow and extraction arrangement in the tank.



Since the storage needs to be installed below the elevation of the roof, a pump will be required to lift and circulate the water through the house.

Sizing of the storage

The capacity of the storage depends mainly on the size of your household, your consumption rate and the reliability of your primary water supply. If your home is to be totally reliant on rainwater, the size of your storage will need to be greater.

Safety suggestions

Disinfection of water intended for drinking is recommended particularly for use by persons with weakened or compromised immune systems, such as the ill, the very young or very old, and recovering patients.

To disinfect your water, add 10 milligrams of bleaching powder (containing 25% of free chlorine) per litre of water, shake and leave to stand for 30 minutes. It is also recommended that you boil water intended for drinking for at least 3 minutes.

Maintaining your RWH

Maintenance of your RWH system is of great importance to ensure the best water quality.

- Keep your roof, guttering and filters free of any accumulated organic matter (leaves, animal droppings), and clean the first-flush component periodically;
- Clean the storage tank annually with a chlorine solution;
- Repair any cracks in the tank;
- Seal off any holes in the screens;
- Drain, clean and disinfect the tank immediately if the water becomes contaminated by a dead insects or rodents;
- Prevent mosquitoes from breeding in the tank by applying domestic kerosene (**not power kerosene for equipment use**) at a concentration of 5 mL per 1,000 litres of water.

For further information about RWH, contact:

Caribbean Environmental Health Institute

The Morne, P.O. Box 1111

Castries, St. Lucia

Tel: 758-452-2501

Fax: 758-453-2721

Email: cehi@candw.lc

You can download the RWH Handbook
at www.cehi.org.lc

Rainwater

“Catch it While You Can”

Be Water-Wise!...Harvest Rainwater
for your everyday uses!



An initiative of the Caribbean Environmental
Health Institute (CEHI)
in partnership with the United Nations
Environment Programme (UNEP)

What is Rainwater Harvesting (RWH)?

Rainwater harvesting (RWH) is an old tradition dating back over 4,000 years. It is simply the collecting of rainfall for use.

In many parts of the world including the Caribbean, rainwater is the primary source of water for many households where potable or pipe-borne supplies are not adequately available.

Why harvest rainwater?

It is one of the easiest means of obtaining a fresh supply of water for a wide variety of uses including:

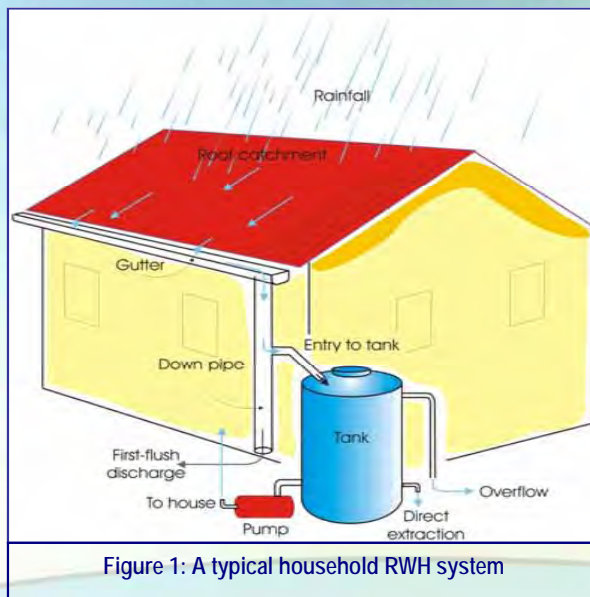
- Laundry and toilet flushing
- Cooking
- Drinking
- Irrigation
- Livestock watering
- General washing

Having your own rainwater harvesting system offers the security of having water available during water shortages and after natural disasters. You can save on your water bills by meeting some of your demands from rainwater.

The RWH system

The typical household RWH system consists of three main components:

1. The collection or catchment area
2. The conveyance system
3. Storage



The Collection or Catchment Area

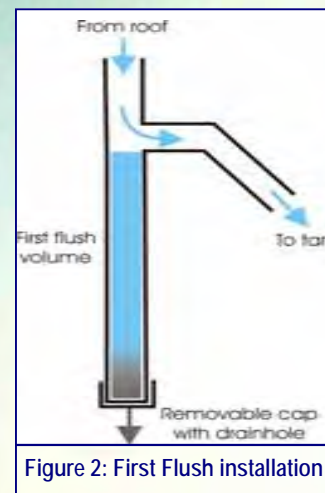
Generally, the rooftop of your house can be used as the collection/catchment area. The surface should be made from neutral materials, meaning that it should be free of harmful chemicals like bitumen or lead sheeting. Smooth metal roofs are best because they are less prone to contamination and water can run off easily.

The Conveyance System

This is the network of guttering, piping and screens that transfer water from the catchment area to the storage tank. Gutters are installed along the roof line to catch runoff. Poly-vinyl chloride (PVC) guttering and piping is preferred as it is smooth, does not degrade, is low cost and easy to install.

The following are key components of the conveyance system to help prevent contaminants from the roof entering your storage tank:

First flush installation



A first flush is simply an extension of the down-pipe from the roof. At the start of rainfall, the initial roof run-off washes to the bottom of the first-flush pipe, carrying with it dirt and other debris. It is held there, while the cleaner water flows over into the tank.

This is shown in Figure 2. The trapped water eventually drains away through a small hole in a removable cap at the base of the pipe. Larger material can be easily removed at a later time.

Screens

Fine mesh screens installed at the entry to the tank prevent debris and other foreign matter from entering, and exclude mosquitoes (vectors of dengue fever and malaria). Insect-proof mesh should be installed at both inlet and outlets of the tank. Strong cloth can be used as a substitute.

Coarse screens serve to exclude larger materials such as leaves. These can be placed at the top of the down-pipes from the gutter.

Storage

The storage tank can be above or below ground (e.g. cistern) and may be of PVC or constructed from steel or ferro-cement.

The tank's interior surface must be lined with a chemically neutral material and must be leak-proof.