Is rain water drinkable?

Rain water is one of the most assured sources for procuring drinking water. Rain water collected in a rain water tank can be stored for extended periods of time with the proper maintenance techniques. Would you believe that the water in a rain water tank is healthier and safer than your well?

When a rain water tank is constructed in a common area.

Proper maintenance is the most important aspect for enjoying the maximum benefit of rain water storage tanks. Constructing a rain water tank with the appropriate technology is a simple task that comprises only 30% of the entire process.

When we construct rain water tanks in common area, we must pay special attention because more people are benefited by a rain water tank in a school, for example, than in a single family. The water storage needs in common areas vary according to the setting and number of beneficiaries. Thus, the following problems can arise when constructing rain water tanks in common places.

1) Number of users
2) Improper use
3) Lack of user awareness
4) Lack of maintenance

Roof

The rate of run-off water on a galvanized sheet roof is higher than on an asbestos or tile roof. The rate of run-off water is very important when rainfall is irregular or limited.

Therefore, for maximum water collection even from a small shower, a greater rate of water run-off offers maximum results. Thatched roofs are not suitable for collecting rain water because they can reduce the purity of the water.

Reaping the maximum benefit from a rain water tank.
An accurately constructed rain water tank can safely fulfill your domestic drinking water needs. To reap the maximum benefit from rain water collection, keep in mind the following points:

1) Protect the purity of collected water
2) Maintain the tank with proper techniques
3) Use water frugally

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Lanka Rain Water Harvesting Forum

Green Movement of Sri Lanka

United Nations Centre for Regional Development

Rain Water for the Thirsty

Water conservation

Life on earth originated in water, and was created by a combination of air, earth, and water. Amongst these, water is the main elements that strengthens and protects the lives of all living beings, flora, fauna, earth and air.

The world's most powerful civilizations have been created based on water, cultures that were strengthened by remarkable human relationships. Our ancestors engaged in water harvesting processes that have now been passed down to us; we now own the technology that cultivates fertile lowlands in valleys through rain water collected in tanks.

103 rivers and streams flowing down from hilly areas were made to merge along the valleys on which our ancestors constructed reservoirs. The water was used for cultivation and developing self sufficiency.

The tank, village and temple have a conceptual bond in ancient culture, and lead to the development of a cultured and sovereign nation. Sri Lanka's identity is based on water. Water storage was considered as a common economic and cultural resource, even for royalty.

What is a rain water harvesting tank?

Rain water harvesting means the collection, preservation, and maximum use of rain water. It is a technology used to collect and store the rain water from rooftops, land surfaces, or rock formations using simple techniques such as jars and pots, as well as more complex techniques such as underground check dams. The techniques usually found in Asia and Africa have evolved from practices used by ancient civilizations found in these regions, and still serve as a major source of drinking water supply in rural areas (United Nations Environment Programme, 2009).

When constructing a rain water tank, the following elements need to be considered.

1) Type of materials to be used
2) Quantity
3) Possible investment

Benefit of rain water harvesting.

Rainwater, which comes free, is the purest form of water. If collected and stored properly, it can be used for all domestic purposes, including drinking. Collected water can be used during emergencies such as fires, or when the centralized water system is broken or being repaired.

In view of increasing water demands, there is an urgent need to resort to rainwater harvesting. It promotes water conservation, and is also a cost saving measure, as water in urban areas has to be paid for. Once the size of the rain water tank is decided upon, it must be constructed according to daily water requirements (the number of family members), rain fall pattern in the area, and roof size. The annual monthly water requirement of a family of five is about 3000 liters (20 liters x 5 x 30).

A rain water tank designed for the maximum advantage within that scale must hence be used. Investing a higher amount of money in a high capacity system when one needs a lower capacity, or a low capacity system when one needs a higher capacity, is inefficient. (Lanka Rain Water Harvesting Forum, 2009).

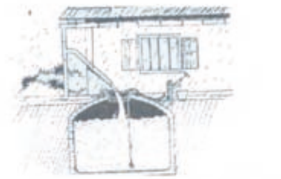
Each rainwater harvesting system consists of three basic components.

1. Surface from which to collect water.
2. Delivery system to transport the water from the surface to the storage reservoir.
3. Storage reservoir or tanks to store the water until it is used. The storage reservoir contains an extraction device.

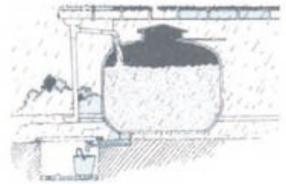
Tank	Capacity (Liters)	Cost (SRs.)
Above ground, Round Ferro Tank	5,000 8,000	41,600 46,800
Below ground, Brick Tank	5,000	35,100
Partially underground tank	10,000	36,400

Of the available tanks, the Round Ferro Cement Tank, which is used above ground, is the most popular tank in Sri Lanka..

Below ground, Brick Tank



Partially underground tank



Above ground, Round Ferro Tank