

## Roof water harvesting model for domestic use

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A study was carried out to address the water scarcity problem in the areas where available water resources are limited. A software model was developed to use runoff water through roofs of the area for domestic purpose using the computer language Visual Basic.

The optimum tank capacity for the area was designed based on maximum dry period and daily water demand for average family. The maximum dry period over the area was calculated using daily rainfall data over 50 years.

A field survey was conducted to find out the daily water demand, the members of an average family, roof area and roof type. The roof water harvesting potential in the area was determined by dependable rainfall method. The average roof area and roof run off coefficient for particular roof type were also considered for determining the optimum tank capacity and roof water harvesting potential in the area.

The optimum tank capacity was tested by water balance method in the region. The developed software model was applied for the Yatiyana area (IL<sub>2</sub> Agro ecological region) in Matara district. The roof water harvesting potential and the optimum tank capacity, for that area were 42.75 m<sup>3</sup> and 2.37 m<sup>3</sup> respectively. The tank capacity by water balance method was 2.97m<sup>3</sup>. The analysis shows that the roof water availability is sufficient for an average family even when the area reached its maximum dry period.

The developed software programme is successfully used for calculating the optimum tank capacity and the roof water harvesting in an area.

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