Asian Science
Volume 7 | Issue 2 | December, 2012 | 155-159

RESEARCH PAPER

Design of cost effective rainwater harvesting systems through computer 'C' programme

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ABSTRACT

An investigation was carried out to calculate water budgeting and to design cost effective rain water harvesting systems through computer C programme. To calculate water budget at residential buildings and for designing the different components involved in the rooftop rainwater harvesting structure, a computer programming was developed in C language for both slopy terrace (residential blocks) and flat terraces (hostel buildings) and the C programme was developed for the calculation of water budgeting in different buildings to find out the total demand, total supply and total deficit or surplus water after the installation of the structure for residential blocks and hostel buildings in Tamil Nadu Agricultural University, Campus. Coimbatore.

Key Words : Rainwater harvesting, Computer C programme, Rooftop rainwater harvesting, Cost analysis

View point paper : Rajkumar, R.H., Natarajan, P. and Shivanand, H.K. (2012). Design of cost effective rainwater harvesting systems through computer 'C' program. *Asian Sci.*, **7**(2): 155-159.

Water is considered as liquid gold of our life. Every living cell is water dependent and water sustained. All human activities are predicted upon the availability of water. Water is omnipresent; its existence is a fundamental assumption. Water is considered to be a free commodity-a substance to be taken, used and disposed-without a thought that it is becoming valuable. Agriculture has always remained a gamble with monsoon, and the situation is further assuming precarious levels due to non-adherence of implementing water harvesting strategies. The term 'water harvesting' is the art and science of improving water yield efficiency of a catchment and utilization of the surface runoff in a smaller collection or spreading area by direct cultivation of plants or through storage and recycling (Bali, 1988). However, this concept is an 'old wine in a new bottle'. It is very much needed in the recent years, to narrow down the supply-demand gaps of water. If 5 per cent of annual rainfall is harvested properly, that would produce a substantial quantum of water to the tune of 900 million litres.

RESEARCH METHODOLOGY

Study was carried out to calculate water budgeting and to design cost effective rain water harvesting systems through computer C programe for residential premises and hostel building based on rainfall analysis, at Tamil Nadu Agricultural University, Campus in Coimbatore.

Experimental site:

For designing roof top rainwater harvesting structures,

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