RAIN WATER HARVESTING SYSTEM FOR JNNCE CAMPUS – A CASE STUDY

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ABSTRACT: Water scarcity is serious problem throughout the world for both urban & rural community. Urbanization, industrial development & increase in agricultural field & production has resulted in over exploitation of groundwater & surface water resources and resultant deterioration in water quality. The conventional water sources namely, well, river and reservoirs, etc., are inadequate to fulfill water demand of individuals due to unbalanced rainfall, while the rainwater harvesting system investigate a new water source to fulfill the water demand of every individual in that region. The aim of the present study is to use rainwater and thus taking close to the concept of nature conservation. In this study, the rain water harvesting (RWH) system is analyzed as a alternative source of water at campus of JNN College of Engineering, Navule, Shivamogga.

Keywords: *Rain water harvesting, hydrological parameters, runoff volume.*

1. INTRODUCTION

Rain water harvesting is defined as the process of collecting and storing rainwater for later productive use. Rain water harvesting is one of the trending methods to store runoff water from roof tops and also from surface runoff to meet the scarcity of water for the region. One of the biggest challenges of the 21st century is to overcome the growing water shortage. To reduce the scarcity of water and fulfill the demand of every individual in urban areas, best way is to store rain water by adopting a 'Rain

Water Harvesting Method'. Rain water can be used for multiple purposes ranging from irrigating crops to washing, cooking and drinking.

Rainwater harvesting system has been proven to conserve freshwater resource. However, it depends on many factors including amount of water to be collected, non-potable use of water economic feasibility and most importantly public perception of the system and its benefit in water conservation and ecosystem.

The increasing urbanization lead to concentrated population density at places resulting into uneven drawing of ground water. The groundwater there may gradually fall back to its normal level. The extensive and unplanned usage of ground water not only disturbed the natural water table but also has made the groundwater contaminated and, in many a place, totally unfit for any use. The groundwater in these places required to be immediately left to revive. Collecting rainwater, harvesting the storm water runoffs, in these places, surly would minimize the risk of the water.

Water is a natural resource which is essential for every institution in the world. Water is used in the various purposes such as drinking, gardening, toilet flushing, recreational purpose etc. To fulfill the institution demand, rain water harvesting system is very essential nowadays. Hence, in every institution, it is necessary to create awareness among the youngsters to save the water in the form of rain for the future needs.

The current study attempts to analyze the feasibility of rain water harvesting system for college campus. For present study of rainwater harvesting system, a part of JNNCE campus is considered as study area. This campus is situated in Navule region, Shivamogga district and covers about an area of 51 acres and has implemented rain water harvesting system in its campus already, but it stores both