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Assessment of Potential Ground Water Recharge from Water Harvesting Structures in Ayalur Watershed, Erode District, Tamil Nadu, India

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ABSTRACT

The present study was taken up, during the years 2014 and 2015, in Ayalur Watershed located in Gobichettipalayam Taluk, Erode district, Tamil Nadu where the National Watershed Development Project for Rainfed Areas had been implemented by the ICAR- Indian Institute of Soil and Water Conservation, Research Centre, Udhagamandalam. In this watershed underlain by hard rock aquifers, the efficacy of the water harvesting structures to induce potential ground water recharge was investigated. Potential recharge from twenty water harvesting structures with a total storage capacity of 21868.9 m^3 varied between 7477.1 and 23870.4 m^3 during the years of study which works out to 0.3 and 0.76 per cent of the total annual rainfall and 0.6 and 1.21 per cent of runoff causing annual rainfall received in Ayalur watershed. Rainfall weighted annual average potential recharge was found to be 16531.7 m^3 which was 0.58 and 1.03 per cent of total annual and runoff causing rainfall, respectively.

Key words *Ground Water Recharge, Water Harvesting, Ayalur Watershed*

late become a subject of intense speculation. Ground water recharge can be defined as the entry into the saturated zone of water made available at the water table surface, together with the associated flow away from the water table within the saturated zone. Ground water recharge that takes place in a natural condition through infiltration is the natural ground water recharge and rainfall is the most important source of natural ground water recharge. Any process by which man fosters the transfer of surface water into the ground water system can be classified as artificial ground water recharge. Artificial recharge may also be defined as the augmentation of the natural infiltration of precipitation or surface water into the underground formation by appropriate methods, commonly at rates and in quantities in excess of natural recharge. The methods of artificial recharge like water spreading such as dikes/ checks across natural channels, soil conservation measures, percolation tanks/ponds; recharge through pits and wells and induced recharge accelerate ground water recharge through increased infiltration into the ground to replenish /augment ground water resources. Though watershed programmes have top pri y for ground water recharge, the influence of artificial recharge structures on ground water recharge