



## **Estimation of harvestable water in the village tanks of Chhattisgarh State in eastern India during excess, normal and deficit rainfall years**

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In Chhattisgarh State in Eastern India village tanks play a vital role not only for domestic purposes but also for providing life saving irrigation to rice crop. Rice is the major crop grown during the rainy season mostly under rainfed conditions. These village tanks provide one life saving irrigation to the crop mainly during reproductive stage. The quantum of water available in these tanks is dependent on the SW monsoon rainfall activity. During active monsoon years the rainfall is excess and during weak monsoon years the rainfall is deficit. For assessing the quantum of harvestable water in the tanks in different districts of Chhattisgarh State, an index called “ storage index” has been developed. The storage index is

$$SI = \text{Annual surplus water} / \text{Average annual rainfall}$$

The denominator is kept common for comparing the storage index values during excess, normal and deficit rainfall years as the quantum of water surplus varies under these situations..

An examination of the storage index during excess, normal and deficit rainfall years revealed that there is considerable spatial variability in the SI during these three situations across the districts. During excess rainfall years, the harvested surplus water can support for taking a second winter crop with limited water. However, during deficit rainfall years, the harvestable rain water can not provide even a supplemental irrigation to rice crop. Thus, water harvesting through village tanks is not feasible during

weak monsoon conditions. Hence, other strategies need to be adopted for mitigating drought conditions during deficit rainfall years due to weak monsoon.