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**Sustainable Groundwater Development through Integrated Watershed Management for Food Security: A case study from India**



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India desires to be self-sufficient in food and “food secured”. Therefore, it is imperative that we need to grow sufficient food within the country. At the same time, for domestic food security, we need to sustain economic growth to raise the income levels and purchasing power of the poor people. Further depletion of groundwater resource has been affecting the small and marginal farmers the most, threatening their livelihood in many cases. The sustainability of groundwater use is one of the core areas, which requires major attention for meeting the water requirement and ensuring food security.

Groundwater, which is 38.5 % of the available water sources of the country, plays a major role in irrigation, rural and urban drinking water supply and industrial development. Groundwater meets nearly 55 % irrigation, 85 % of rural and 50 % of urban and industrial needs. The average annual rainfall in the country is 1170 mm, which correspond to an annual precipitation of 4000 BCM. Out of this volume of precipitation, the present total water use is 643 BCM of which 83% is for irrigation. This is projected to grow to 1447 BCM 2050. Overexploitation of the groundwater beyond the sustainability limits has resulted in widespread and progressive depletion in selected pockets of 370 out of 603 districts in the country. Sustainable groundwater development and management in the overexploited regions needs to be taken up by incorporating artificial recharge to groundwater from in-situ and ex-situ rainwater harvesting through integrated watershed interventions, management of salinity ingress in coastal aquifers, conjunctive use of surface- and groundwater.

