



Impact assessment of watershed interventions under low rainfall situations in semi-arid Karnataka

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ABSTRACT

Impact assessment of an integrated watershed development project located in a low rainfall zone (417 mm) in semi-arid Karnataka was carried out. Rainfall distribution during the project period (2008-15) was erratic with four years out of seven receiving less than normal rainfall which led to changes in cropping patterns. Share of area allocated to maize and sorghum increased by 2.8% and 3%, respectively since these crops provide much needed fodder. Due to *in-situ* soil moisture conservation practices like bunding, yield of groundnut, sorghum, maize and onions in rainfed areas increased by 19.4, 9, 16 and 2.8%, respectively. Recharge of groundwater due to land based interventions in initial years led to an increase of 320% in number of bore wells and irrigated area increased by 22%, but extraction of water continuously along with low rainfall years led to failure of 75% of bore wells by end of the project period. Water quality also deteriorated over time and concentration of salts (Na⁺, Mg²⁺ and HCO₃⁻) increased. Direct employment of 5998 man days was generated over three years in different activities. Economic analysis indicated that the project was viable even under low rainfall condition and had a B:C ratio of 1.17 with an internal rate of return (IRR) of 11.92% and payback period of 10 years.