

Enhancing Rainwater Productivity and Economic Viability of Rainfed Crops through Tank Silt Application

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ABSTRACT: A study was carried for treated and untreated silt application at four centers namely Nalgonda (Telangana), Warangal, (Telangana) Anantapur (Andhra Pradesh) and Kolar (Karnataka) under farmers participatory action research programme (FPARP) conducted in 2008-09 and 2009-10. The data were collected from these centers and analyzed. The results showed that the contribution of silt application during second year (2009-10) was more pronounced although 2009 was a mega drought year. Rainwater productivity in terms of yields without and with silt application during 2009-10 (2nd year) varied from 0.29 and 0.33 kg/ha/mm in case of mulberry in Kolar to 2.07 and 3.34 kg/ha/mm in groundnut in Anantapur, respectively. Significantly higher yield increase in treated with silt over untreated registered in case of castor (229% or 2.52 q/ha) in Nalgonda and groundnut (153% or 4.07 q/ha) in Anantapur while it was non-significant in case of cotton in Warangal and mulberry in Kolar during 2008-09. Across the crops and between the treated *versus* untreated trials and years, cotton in Warangal district registered the highest benefit-cost ratio in treated (3.75) and untreated (3.14) trials. Water productivity of crops in terms of income accrued per millimeter of water was found to be higher with silt application than without in both the years in all the centers, however, year 2009-10 was better than 2008-09. The additional benefits to cost ratio (BCR) ranged between 5.16 in case of cotton in Warangal and 0.25 in case of mulberry in Kolar. The pay back period (PBP) and BCR at 12% discount rate of silt application in castor cultivation was found to be 6 years and 1.70, respectively while internal rate of return (IRR) worked out to 30%.

Key words: Tank silt, recycling, rainwater productivity and economic viability

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