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Impact analysis of participatory integrated watershed management programme in semi-arid region of Tamil Nadu, India

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ABSTRACT

Watershed management aimed to containing the deterioration of natural resources for maintaining the ecological balance and sustainable economic development. This paper presents the impacts of the participatory watershed development. The runoff varied from 27 mm to 43.2 mm, which was 4.5 to 7.2% of the total rainfall. A total of 266 ha-cm additional surface water storage capacity was created through water resource development and increased wells recuperation rate by 10 to 15%. Influence zone of percolation ponds showed increased irrigated area from 13.7 ha to 25.1 ha (84%) with crop diversification. The average survival percent of fruit plants varied between 51 and 98.66%. The yield of dry land crops was increase by 11 to 14%. Cultivated Land Utilization Index (CLUI) increased by 0.13 (47 days) in dry land and by 0.04 (15 days) in irrigated condition. Overall Crop Productivity Index (CPI) increased from 0.547 to 0.613 with an increase of 12% in productivity level of crops. Overall Crop Fertilization Index (CFI) increased from 0.69 to 0.75, registering an increase of 8% in rate of nutrients application. The overall Watershed Productivity (WP) increased by 17.2% of horse gram. The overall People's Participation Index (PPI) was 62% indicating that the stake holders' overall participation was high. A total of 10105 mandays employment was generated due to various interventions. Average milk production has increased by 59 liters per family per year and consumption increased from 0.91 to 1.03 liters family^{-1}day^{-1}.