



Resource Conservation in Eastern Region of India: Impact Studies on Watersheds

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INTRODUCTION

Rainfed areas currently constitute 55% of the net sown area of the country are home to two-thirds of livestock and 40% of human population in the Eastern Region of India. The region has a predominance of tribal (54 tribal communities) constituting about 30% of the total population (Chauhan, 1998). It's also observed that around 62.5% of the total geographical area of Eastern Region is degraded exclusively by water induced soil erosion which in conjunction with salt-affected and acid soils works out to be 73.9%. Data on soil loss tolerance limits indicate that the tolerance (T) value varies between 7.5 and 12.5 t/ha/yr across the region (Lenka *et al.*, 2013). Indiscriminate deforestation and practice of *Jhum* cultivation lead to accelerated erosion for which proper conservation measures need to be established, especially on very steep slopes. The eastern region as a whole contributes 27, 14 and 8% of area under cereals, pulses and oilseeds, respectively to the country's area under these crops. The production of these crops also follows the similar trend that of area. The average productivity of cereals and oilseeds is lesser by 13 and 36%, respectively over the average national productivity (1950 kg/ha, cereals and 925 kg/ha oilseeds). However, the productivity of pulses is higher (+14%) for the region as compared to the country's average productivity of 593 kg/ha.

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1. Natural Resources and Agriculture in Eastern India

This region is unique and characterized with diverse natural resources (physiographic, soil diversity, bio-diversity, water resources and climatological parameters like rainfall, bright sunshine hours etc.), human resource (majority of tribal population) and socio-economic aspects (low level of literacy, low per capita income etc.). Majority of the population is predominantly tribal and dependent on forest, agriculture and land-based activities. The agricultural production system in the region is predominantly rainfed, mono-cropped at subsistence level. Slash and burn agriculture is still practiced in almost all the states of Eastern India. The region, once richly endowed with rich genetic diversity of plants, has been denuded due to human interference by adoption of unscientific land use practices. With rapid increase in human and livestock population and the rising demand of food, feed, fuel, fodder, fiber, timber and the other developmental activities, the farmers have been forced to exploit forest land and water resources at sub-optimal level in complete defiance of the inherent potential. This has resulted in progressive decrease in forest cover, loss of biodiversity, serious soil erosion leading to depletion of plant nutrients, gradual degradation and decline in land productivity (Sahoo *et al.*, 2018) and its carrying capacity, silting of major river basins causing recurrent floods in the plains, and drying up of perennial streams as well as ecological imbalances. Gradual degradation of these resources is of prime concern and calls for location-specific measure to conserve, utilize and manage these