

# Permissible soil loss limits for different physiographic regions of West Bengal

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Land degradation due to water erosion is a major impediment for optimum land productivity in West Bengal (WB). Sustainable development of the state needs appropriate land-use planning taking into account the heterogeneity in soil and land resources. In this study, the maximum permissible soil loss rates (*T* values) were computed for 115 mapping units of WB by integrating the most sensitive soil indicators such as infiltration rate, bulk density, water stable aggregates, organic carbon and fertility status to assess soil quality governing soil resistibility to erosion. For each mapping unit, indicator soil attribute values were quantitatively expressed in the 0 to 1 scale and an aggregate score was computed from the attribute scores and the corresponding weights. The results suggested a wide difference in the *T* values among the regions and mapping units, with values ranging from 2.5 to 12.5 Mg ha<sup>-1</sup> yr<sup>-1</sup>. In the state as a whole, about 88% of the area has '*T*' value of 12.5 Mg ha<sup>-1</sup> yr<sup>-1</sup>. The relatively plain lands in the Indo-Gangetic plain, coastal and delta plain and the Bengal basin have a higher soil loss tolerance of about 4.0 Mg ha<sup>-1</sup> yr<sup>-1</sup> than the hilly and undulating regions in the Eastern Himalaya and Eastern plateau regions. The information generated will serve as a useful guide for devising differential conservation and resource use plans on the basis of soil resource potential.