



## Soil Loss Tolerance Limits for Different Physiographic Regions of Odisha

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The state of Odisha is severely affected by water erosion induced land degradation due to its hilly and undulating terrain and unsustainable land management practices. Ensuring sustainable development of the state needs appropriate land use plan taking into account the heterogeneity in soil and land resources. In this study, the maximum permissible soil loss rates ('*T*' value) were computed for 159 mapping units of Odisha by integrating most sensitive soil indicators such as infiltration rate, bulk density, water stable aggregate, 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 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*' value among the regions and mapping units, with values varying from 2.5 to 12.5 Mg ha<sup>-1</sup> yr<sup>-1</sup>. About 45% of total area of the state has a '*T*' value of 10 Mg ha<sup>-1</sup> yr<sup>-1</sup> and 32% having '*T*' value of 7.5 Mg ha<sup>-1</sup> yr<sup>-1</sup>. In general, the southern, northern and western regions of the state have a lower '*T*' values than the coastal plains and delta region. Major chunk of area under Eastern Ghats, Garhjat hills, Dandakaranya and Mahanadi basin has '*T*' < 10.0 Mg ha<sup>-1</sup> yr<sup>-1</sup> and can't afford to lose more than 7.5 Mg ha<sup>-1</sup> yr<sup>-1</sup> of soil. The information generated shall serve as a useful guide for devising differential conservation and resource use plans on the basis of soil resource potential.