

SOIL DEGRADATION RISK ASSESSMENT INTEGRATING TERRAIN ANALYSIS AND SOIL SPATIAL PREDICTION METHODS

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SUMMARY

Soil degradation risk assessment requires before all reliable soil information at commensurate scales, which, in many developing countries, is neither covered by coarse analogous soil maps nor by sparsely available soil profile analyses. Given the serious current degradation problems in the eastern Bolivian lowlands owing to deforestation and poor agricultural practices, we report on an attempt to assess soil erosion risks by integrating terrain analysis and soil spatial prediction methods. Based on homogenized top soil attributes from 191 profile samples, continuous soil texture layer were estimated, using DEM terrain attributes as predictor variables. Spatial prediction functions were defined by means of multiple regression analyses, which provided mapping results with satisfactory prediction accuracy, and moreover allowed a preliminary assessment of potential wind induced soil erosion risks at spatial high resolution.