

10 Conclusion

The goal of this study was to develop and verify an erosion and soil erosion risk model that can easily be employed in developing countries under conditions of limited data availability.

The model ‘**D**etermination of **E**rosion and **S**oil **E**rosion **R**isk’ (DESER) is well suited for this application. The simple algorithms utilised for running the model are flexible to different spatial and temporal data accuracies. The model can be applied universally in areas with semi-arid to semi-humid climate conditions without spatial limitations, but requires adequate computer capacity. Advantages of this model, in contrast to other common erosion and soil erosion prediction models, is its simple usage to assess data sets, the commonly used software it employs, and an easy to manage decision tree for modelling. Thus this model is adequate for users who are not familiar with other erosion and soil erosion models. The model requires time consuming field assessments for the calibration and detection of necessary input parameters. In particular, the assessment of the LCCI is of high uncertainty and thus, very sensitive. Field investigations need to be carried out by experienced and qualified persons (e.g. geographers).

The verification of model results with field observations at eight study sites yields that the DESER model predicts both potential and actual erosion and soil erosion risk with satisfying accuracy. The model provides good qualitative results, presented in 14 classes of actual or potential erosion and soil erosion risk. However, limitations of the model are primarily seen in its accuracy. Since modelling is based on grid data sets with cell sizes of 100 by 100 meters, the output of the risk classification cannot be more detailed. Predictions about the future development of individual erosion and soil erosion damages cannot be assessed with the DESER model; however, the model results depict the potentials of damaging the land due to erosion and soil erosion. The higher the risk, the more likely are severe damages, such as gully erosion or badland erosion, which will occur in the future. Lower risk classes indicate more likely probable damages from sheet and rill erosion.
