Proposed model on levels of degraded land at merawu watershed, banjarnegara regency, central java province, Indonesia

Bambang Sulistyo, author

Abstrak

Conservation of degraded land in Indonesia requires maps of degraded land. The maps were established based onÂ a model developed in 1998 by the then Indonesia Department of Forestry. The model has 2 weaknesses i.e. 1. high level of uncertainty due to vector-based data used to build the thematic maps and 2. parameters redundancy or duplication from the model. This research was aimed to build up a proposed model on levels of degraded land at Merawu Watershed using fully raster-based data supported with remote sensing and GIS techniques. Parameters analyzed were Slope, Erosivity (R), Erodibility (K), Slope Length and Steepness (LS), Cover and Management (C), Support Practice (P) and Percentage of Canopy Cover. These data were presented in fully raster format. Management parameter was not explicitly used in this research because management parameter was already represented by the C and P parameters . Five parameters were directly obtained using fully raster format, i.e. Slope, LS, C, P and Percentage of Canopy Cover. The other 2 parameters went through spatial interpolation process before being presented as fully raster format. Correlation analysis among parameters was carried out. Parameters having high correlation coefficient (r â‰¥ 0.8) were excluded from the model to avoid redundancy. The proposed model only used parameters having low correlation coefficient. The research result showed that the determination of levels of degraded land was more accurate when using only erosion parameters, formulated as: Level of Degraded Land (LoDL) â‰ˆ Erosion â‰ˆ R x K x LS x C x P.