Urban Prediction for Kathmandu integrating GIS and RS Techniques

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Abstract:

Urban prediction is a complex science involving identification of tangible variables, quantification of intangibles and merging them for a multi-criteria evaluation. The spatial nature of the output, with majority of aspatial inputs, adds to the complexity of the analysis. In this study, a criterion based approach for identification of exclusion mask and urban gravity was used. A filter was them applied which made it possible to visualize predictions for any given time scale or part of a time span, provided that the assumptions held true over a longer period of time. The predictions were made on vectors of 1992, and checked on the urban areas extracted from Adeos AVNIR image of 1997, using remote sensing techniques. This process was repeated for recalibration of weight values, until a satisfactory prediction for both growth values and spatial accuracy was obtained. The factors and values obtained were used for prediction of urban areas from Adeos AVNIR 1997 to Landsat ETM+ 2002, taking into account the variation in population growth. The final predictions in this case were done for a period of 5 years and the accuracy of predictions obtained for actual growth values were around 85%.