Effect of geometrically corrected landsat TM data on the accuracy of the land use classification results: a case study in Semarang municipality and its vicinity

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Abstrak

This research was aimed at first, studying and comparing between the accuracies of the geometrically and non-geometrically corrected digital Landsat data; and second, evaluating these classification accuracies to ascertain the possibility of using them as an input into the process of building up a geographical information system. The method used was digital land use classification by applying the data's maximum likelihood algorithm in the two approaches. The first approach involved classification prior to geometric correction (reference) and the second classification after geometric correction (transformed result). Analysis was then carried out through the overlay technique between the frst and the second results. It is found that an error matrix depicting individual and overall accuracies and omissions and commission of errors. Result shows that the overall accuracy of land use classification after the correction is >80%. However, this overall accuracy varied according to the technique applied. But the choice of which technique to be used depends on the average increase and decrease in area. As such, the use of the nearest neighbor interpolation, bilinear interpolation and cubic convultion techniques resulted into an areal increase of 19.54%, 24.80%, and 24.93% and a reduction of 17.17%, 24.60%, and 27.87% respectively.