

Landuse mapping and forest area change detection using IRS satellite Imagery (Case study: Northern forests of Iran)

M. P. Bavaghar^{a,*}, Y. Igderi^b, A. Masturi^c

^a Dep. Of Forestry, University of Kurdistan, Sanandaj, Kurdistan, Iran- m.bavaghar@uok.ac.ir

^b Dep. Of Forestry, University of Kurdistan, Sanandaj, Kurdistan, Iran- yousef_igderi@yahoo.com

^c General Office of Natural Resources and Watershed, Gorgan, Iran

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Abstract

This study is focused on the determination of landuse and forest area changes using IRS-liss III satellite data in the Aliabad Katool region from 1995-2007. After preprocessing, image classification was done with supervision methods, including maximum likelihood, minimum distance, parallelepiped, and artificial neural network. In order to assess the accuracy of classification, a sample ground truth map consists of 360 circle plots (1 ha) was generated and the type of their usage specified. Results showed that classification of lands with 5 classes (%57) has average overall accuracy and kappa coefficient (0.32). For determination of the forest and non-forest region and changes of this area, classification was done in 2 forest and non-forest classes. The results of error matrix revealed that separation of two classes has high overall accuracy and kappa coefficient (%92, 0.81) respectively. Finally this map compared with the map of outset the period and delineate that in whole of the period, 341.08 ha equals %2.44 of forests were decreased.

* Corresponding author.