A comparition between different methods for monitoring the cover of Arid Ein-khosh region using RS and GIS

Abstract:

Desertification is land degradation and loss of biological productivity in arid, semi-arid areas. Dehloran in an arid region in south and southeastern ilam of Iran that suffer from severe types of desertification and land degradation. To assess the trend of desertification during 1990-2006 period, we conducted a two years study in the region. The basic tools that employed in this study were in fieled sampled data, TM and LISS III images plus with RS, GIS and statistical softwares. All needed processes were done on the image and vegetation indexes were developed. Filed sampling was carried out in different parts of the region. To determine the best vegetation index, we evaluated 83 vegetation indexes, among them PVI1, SAVI, WDVI proved to be the best for discriminating the plant cover on the images. Then through maximum likelihood algorithm, the images were classified in two categories:vegetation and non-vegetation. Kappa coefficients of resulted classification maps for theers selected indices calculated using confusion matrix, suggesting that PVI1 map is the most accurate. Finally, change detection map was obtained by subtracting images, showing that 11/10% of the study area exoerienced changes in vegetation cover from year 1990 to 2006. of all changed area 75/55 belonges to desertified class while just 12/21 of changed area indicates the restoration.

Keywords: desertification, trend, vegetation indices, dehloran, PVI1

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Department of range and watershed management
The thesis submitted for the degree of M.Sc
(in the field of combat desertification)

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Octobr 2009