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Land Use Change Detection Using Remote Sensing and GIS

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Abstract : In recent decades, rapid and incorrect changes in land-use have been associated with consequences such as natural resources degradation and environmental pollution. Detecting changes in land-use is one of the tools for natural resource management and assessment of changes in ecosystems. The target of this research is studying the land-use changes in Haraz basin with an area of 677000 hectares in a 15 years period (1996 to 2011) using LANDSAT data. Therefore, the quality of the images was first evaluated. Various enhancement methods for creating synthetic bonds were used in the analysis. Separate training sites were selected for each image. Then the images of each period were classified in 9 classes using supervised classification method and the maximum likelihood algorithm. Finally, the changes were extracted in GIS environment. The results showed that these changes are an alarm for the HARAZ basin status in future. The reason is that 27% of the area has been changed, which is related to changing the range lands to bare land and dry farming and also changing the dense forest to sparse forest, horticulture, farming land and residential area.

Keywords : Haraz basin, change detection, land-use, satellite data
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