

Assessment of land cover change detection using remote sensing data in Ahvaz plain

Abstract

Natural and human factors cause of phenomenon changes in land surface such as vegetation cover made during the long-term, then it situation has affected ecosystem and land performance. Therefore, detection of these changes is an important for optimum ecosystem management. Remote sensing technique using satellite image with high spectral and spatial resolution and several kinds of process techniques for studying land use and vegetation change and also facilitate their management. This study aim to evaluated different vegetation indices for assessment vegetation cover change in 18 years period in Ahvaz plain. The using of satellite images sensor TM (1991) and ASTER sensor (2008) image data. Geometric and atmospheric correction operation, different detection processing (improved contrast, Band ratio and vegetation index) was done on the data. For changes detection, number of 28 vegetation indices were calculated from ASTER image data and compared with vegetation cover assessments at monitoring points made during fieldwork. According to use land types and heterogeneous percent vegetation cover, the region was divided into four land use and selected suitable vegetation index for each land use. The results showed that PVI2 index which evaluated on the basis of soil line intercept concept is highest correlation with region covering and is as most favorable indicator for changes map preparation. Final changes map were prepared in the three classes of desertification, non change and reclamation. Due to implement of desertification projects (sprayed mulch and cultivation of seedlings) by government organization and combined culture in order to use from the participation of people in the region many area changes and also mulched and wasteland conversion to agricultural lands and gardens by people of region the study, land cover area have been increased, and cover changes area have been reached to 17.5 percent of the area total during the study period. 69.8 percent of changes were positive and will stand in the resuscitation class and 30.2 percent of changes were negative change and will stand in the desertification class.

Key words: vegetation index, change detection, remote sensing, Ahvaz plain



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