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**The Thesis Submitted for the Degree of M.Sc (in the field of
Dedesertification Science)**

**Development of a Regional Model for
Evaluating Desertification Intensity
Based on Wind Erosion Using
FAO-UNEP and MICD Models in
Zahak Region of Sistan**

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Abstract

Today, wind erosion and desertification is a major concern in most developing countries including Iran in particular. Many studies have been carried out to assess and prepare desertification map in the world and as a result several regional models have been developed. In parallel, the recognition and estimation of processes in order to present the factors and situation of desertification are the basic needs of desert for the desertification control. In order to develop a regional and quantitatively assess the present situation of desertification, as study was carried out in an area of 88350 hectares in Zahak region of sistan. In this study, at first by combining information extracted from topographic and geologic maps, air photos and field visits, the study area was divided into 11 geomorphologic facies; each of which was considered as the main unit for evaluation the present situation of desertification. Currently FAO-UNEP and MICD models are the most famous model used to assess desertification intensity in Iran and around the world, it was attempted to identify and select effective factors emphasizing wind erosion criterion based on land use. Then, the numerical value of indices in each unit was allocated to assess desertification situation of the study area. Finally, the present situation of desertification intensity of the study area basically prominent criterion in four classes of insignificant and low, medium, intense and very intense was estimated. The results indicate that in the developed regional model, the study area (with respect to intensity of desertification) is placed in about 734.33 hectare (0.9 %) in the medium class, about 61473.38 hectare (73.6 %) in the intense class and about 21310.22 hectare (25.51 %) in the very intense class. also the weighted mean of quantities valuation in the total area is $DS=25.52$, shows that it the intensity of desertification of the total area lies within intense class.

Key word: Desertification intensity, FAO-UNEP model, MICD model, wind erosion, Zahak Region.