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**Dissertation for M.Sc Degree in De-desertification**

# **Assessment of Desertification Intensity Using IMDPA Model in Sarbisheh Hosseinabad Region**

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### **Abstract**

The process of desertification in developing countries and countries are with desertification high potential, the intensity is high. So to counter this phenomenon, especially in these countries will be very effective and useful. So far combat desertification and land degradation as the priorities of local, national, regional, global and especially at the national level is not considered in developed countries and in developing countries. Therefore, identifying criteria and indicators to provide a model to show the desertification and determine the most important factors is necessary to prevent the spread of desertification factors. In each region, depending on climate, geology and geomorphologically and ... , several factors are involved in desertification. To understand the factors affecting desertification and potential desertification have been done many investigations that result is present several models of desertification. In this research in order reach the main purpose is assessment of desertification intensity in Sarbisheh Hosseinabad region, IMDPA model was used. This methodology is the latest methods and desertification model in Iran, by Faculty of Natural Resources University of Tehran has provided in partnership with the Forests and Rangelands Organization.

In order to use this model and desertification mapping in Sarbisheh Hosseinabad region three criteria considered according to region conditions. These three criteria are: criteria of climate, vegetation and wind erosion. Using the above model, each of the indicators studied were Investigated in every single working units. And calculating the geometric mean indicators, and using software ArcGIS, were made maps concerning the status of criterion. Finally integrating and determine geometric mean criteria was obtained the map of desertification intensity of the study region. According to the three selected criteria, the final map of desertification intensity of the region is indicates the medium and high level of desertification in region. Wind erosion criteria with the average value of 2.63 and vegetation criteria with the average value of 2.73 are considered in high class and climate criteria with the average value of 3.70 is considered in very high class of desertification. Among the indicators continuing drought, dry and the annual rainfall respectively with the average value 4, 3.87 and 3.41 are the most effective indicators and decay facies, vegetation reconsider and the number of windy days respectively with the average value 2.41, 2.50 and 2.60 are the least effective indicators on desertification.

**Key words:** desertification, indicator, IMDPA model, criteria, Sarbisheh Hosseinabad region.