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Comparison of two methods of desertification intensity and wind erosion intensity to determine the cause of desertification and land degradation In the eastern part of Nimroz city

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https://www.unccd.int/

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Abstract

Desertification is a global issue with serious implications for biodiversity, environmental safety, poverty eradication, socio-economic stability and sustainable development around the world. The most appropriate method to determine the severity of desertification risk is to use experimental models. In this study, according to the conditions of the study area, with the studies and studies performed, two models, MICD and IRIFR, were used to assess the risk of desertification and wind erosion in the east of Nimroz city. For this purpose, first the geomorphological facies map of the region was obtained. According to the map, the study basin was divided into 2 units, 3 types and 26 geomorphological facies, which were the basis for assessing the risk of desertification and wind erosion. In order to assess the risk using the MICD model and wind erosion by the IRIFR model, the indicators of each model were used. Classification was prepared based on the relevant model, desertification and wind erosion risk map in the east of Nimroz city. The results of desertification risk map based on the MICD model of the study area were divided into four classes (I, III, IV and V). Among the mentioned classes, class IV had the highest level of the region with 50.75%. The results of wind erosion risk study using IRIFR model showed that the study area is divided into 4 wind erosion classes, the highest area of which is air erosion class II with 41.41% of the area, which is a total of 124542.35 tons per square kilometer per year of sediment production in the whole basin. Finally, the two facies of sand dunes (1-1-7) and abandoned agricultural lands (1-1-5) had the highest risk of wind erosion and desertification, which can be prioritized in management plans. Be in the desert. Comparison of the two models also shows that although due to different indicators and different amplitude scores, desertification and wind erosion risk classes are not highly correlated with each other, but they have acted the same in identifying critical areas and emphasizing wind erosion as a key factor.
Keywords: Desertification risk, Wind erosion, MICD model, IRIFR model