



Comparison of climate change scenarios on the desertification hazard intensity and risk of Hablehroud basin, Tehran province

Navid Ziaee¹, Majid Ownegh^{2*}, Hamid Reza Asgari³, Ali Reza Massah Bavani⁴, Abdol Reza Salman Mahini⁵, Mohsen Hosseinalizadeh⁶

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Abstract

Climate change and drought have negative consequences, including the spread of deserts. In this research, the impact of climate change on some climatic variables (temperature and precipitation) of Firoozkooch and Garmsar synoptic stations in the period 2030-2011 and 2065-2046 using LARS-WG model under scenario A2, B2 and A1B and finally desertification hazard and risk using ESAs model in Hablehroud basin due to ecological sensitivity of this area were assessed. The results revealed that the precipitation in the near future will increase from 0.23 to 4.80 mm and in the middle future will decrease from 0.80 to 0.15 mm. The minimum and maximum temperatures will increase for both future periods. Most changes in desertification classes in the near future are related to scenario B1 and scenario A1B in the middle future, in which we can consider transition and change of hazard classes (F2, F3 and C1) to the critical classes (C3 and C4). In both future periods, the percentage of the risk classes area of IV and V (critical) will increase. Therefore, this increase for the middle future will be from 15.49% for scenario B1 and class IV up to 77.50% for scenario A2 and class V.

Keywords: Desertification, Global Warming, Hablehroud, HadCM3 Model, Lars-WG.

1. PhD. Student of combat desertification. Gorgan University of Agricultural Sciences and Natural Resources.

2. Professor of Gorgan University of Agricultural Sciences and Natural Resources. Email: mownegh@yahoo.com

3. Assistant Professor of Gorgan University of Agricultural Sciences and Natural Resources.

4. Associate Professor of Tehran University.

5. Associate Professor of Gorgan University of Agricultural Sciences and Natural Resources.

6. Assistant Professor of Gorgan University of Agricultural Sciences and Natural Resources