



Assessing the impacts of climate change on rainfed wheat production in Hamedan Province

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Climate change is one of the greatest challenges in the 21st century and agriculture sector, particularly rainfed crops yields, may be very vulnerable to these phenomena. Since the wheat is the most important cereal crop in Iran, this paper aims to analyze the potential impact of climatic variables (temperature and precipitation) on rainfed wheat productivity in Hamedan Province, IRAN. For this purpose, we have used the generalized additive models to model yields of rainfed wheat based on climatic variables during 2004-2012. Then, based on sensitivity of rainfed wheat to temperature and precipitation in this period we predict the potential effects of climate change on rainfed wheat yield under the SRES A1FI and B1 climate change scenarios. Results suggest that yields of rainfed wheat would decrease in all Hamedan's counties primarily because of decreasing of October to June precipitation (rainfed wheat-growing seasons) and higher temperature. As a result, it is predicted that the yield of rainfed wheat in Hamedan Province under the A1F1 and B1 scenarios falls by 41.3% and 20.6% respectively in the 2080s.

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