

How Does the Variability in the Frequency and Intensity of Extreme Climate Indices Explain Variability in Crop Productivity for Turkey?

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Studies in the literature usually focus on the effects of climate change on crop productivity and yield, but the studies on how long-term climate variability has an impact on crop productivity and yield draw attention less. In addition, these studies are mostly carried out using statistical methods and predictions with basic climate parameters. To this respect, we have used indices indicating effects of extreme climatic events on wheat and maize productivity instead of basic climate parameters through a crop model called as CROPSYST for the domain of Turkey for the period of 2020-2050 with respect to the reference period of 1991-2012. Based on this, we tried to see how wheat and maize, which grow in most part of Turkey, would be affected within the scope of climate change in the near future period. Model results show that crop productivity will be affected in some part of the domain in the near-future period.

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