

Regional Climate Change and its Impacts for Turkey

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The aim of this study is to detect regional climate change over Turkey by using both statistical and numerical modeling techniques. This study focuses two important climate variables – temperature and precipitation and one hydrological variable – streamflow. First of all several statistical techniques were applied to find the significant trends. Time series of monthly mean temperatures (mean, maximum and minimum) and total precipitation from 262 meteorological stations and monthly average streamflow from 110 gauging from 1951 to 2004 are used for statistical study. Several homogeneity tests are performed for these datasets. As a result, %10 of data were found inhomogeneous.

One of the primary findings of this study is the significant increasing in temperatures and decreasing in precipitation in the western Turkey. This may possibly due to reduction of cyclone numbers in winter or shifting of cyclone track paths northerly over the area of interest. We also found that minimum (night-time) temperatures have increasing trends in spring and summer seasons, significantly, because of the rapid urbanization after 1980s.