

CLIMATE CHANGES AND TRENDS IN TEMPERATURE AND PRECIPITATION OF RIZE (NORTHEASTERN TURKEY) FOR THE PERIOD 1975-2001

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There is increasing evidence that the global climate is changing as a result of anthropogenic activity. The emissions of anthropogenically produced heat and altered physical characteristics of the surface are responsible for sufficient changes in the local, mesoscale and global climate. Statistical analysis were applied a historical set of rainfall and temperature data collected at the Rize (Northeastern Turkey, 41.00° N; 40.50° E). In the climate change analysis, increasing trends of approximately 0.9 °C and 2.3 °C in 27 years in the mean annual and mean maximum annual temperature were found, respectively. There was variability among years, with a standard deviation of 0.6 °C where the average for 27 years period is 14 °C. The trend is towards a warmer climate and two periods were detected: 1975-1993 and 1994-2001, which had average temperature 13.8 °C and 14.6 °C respectively. The trend of the first period is towards a cooler climate, whereas the trend of the second period is towards a warmer climate. The potential impacts of the climate change are known on the causes of flood flows. In the analysis, annual, seasonal and monthly precipitations were considered. Results showed that the trend is towards a wetter climate, with an estimated increase of about 222 mm in the whole period. Two period, averaging 2092 mm and 2279 mm respectively were detected from fluctuation in rainfall. The trend of the first period (1975-1984) is towards a drier climate, whereas the trend of the second period (1985-2001) is towards a wetter climate.