

O 41. WATER BUDGET IN TURKEY UNDER THE IMPACTS OF CLIMATE CHANGE

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ABSTRACT: Since the industrial revolution (the mid-19th century), the intensive increase in greenhouse gases released and accumulated into the atmosphere, as a result of anthropogenic and natural activities, have caused global warming, and the world have faced with the challenges of climate change that has political, social, cultural and economic impacts and that is expected to be more intense in the future. Weather events with the expected increase in temperature, evaporation, and changes in rainfall patterns have raised the question of "Are we running out of water?". It is observed that the potential water budget in Turkey was between 350-550 billion m³ in the period of 2000 – 2019. According to the intermediate (RCP4.5) and high emission (RCP8.5) scenarios, it is expected that there will be an increase in the average temperature and changes in the amount of rainfall for the period of 2016-2099. From the high emission scenario, it is expected that Turkey's annual water budget will be more than 300 billion m³ at the end of the 21st century. In this study, protective and sustainable measures, which will ensure that the potential water budget in Turkey is sufficient at the end of the century against the threat of drought that may occur with the expectation of increased temperature and changes in rainfall, have been evaluated.

Keywords: *Climate Change, Climate Projections, Water Budget*