

Study of Climate Change Scenarios (IPCC) in the Littoral Zone of the Caspian Sea

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Abstract : Climate changes have unpredictable and costly effects on water resources of various basins. The impact of atmospheric phenomena on human life and the environment is so significant that only knowledge of management can reduce its consequences. In this study, using LARS.WG model and down scaling of general circulation climate model HADCM-3 and according to the IPCC scenarios, including series A1b, A2 and B1, we simulated data from 2010 to 2040 in order to using them for long term forecasting of climate parameters of the Caspian Sea and its impact on sea level. Our research involves collecting data on monthly precipitation amounts, minimum and maximum temperature and daily sunshine hours, from meteorological organization for Caspian Sea coastal station such as Gorgan, Ramsar, Rasht, Anzali, Astara and Ghaemshahr since their establishment until 2010. Considering the fact that the fluctuation range of water level in the Caspian Sea has various ups and downs in different times, there is an increase in minimum and maximum temperature for all the mentioned scenarios, which will last until 2040. Overall, the amount of rainfall in cities bordering the Caspian Sea was studied based on the three scenarios, which shows an increase in the amount. However, there will be a decrease in water level of the Caspian Sea till 2040.

Keywords : IPCC, climate change, atmospheric circulation, Caspian Sea, HADCM3, sea level

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