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An Assessment of the Temperature Change Scenarios Using RS and GIS Techniques: A Case Study of Sindh

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Abstract : In the era of climate variability, rising temperatures are the most significant aspect. In this study PRECIS model data and observed data are used for assessing the temperature change scenarios of Sindh province during the first half of present century. Observed data from various meteorological stations of Sindh are the primary source for temperature change detection. The current scenario (1961–1990) and the future one (2010-2050) are acted by the PRECIS Regional Climate Model at a spatial resolution of 25 * 25 km. Regional Climate Model (RCM) can yield reasonably suitable projections to be used for climate-scenario. The main objective of the study is to map the simulated temperature as obtained from climate model-PRECIS and their comparison with observed temperatures. The analysis is done on all the districts of Sindh in order to have a more precise picture of temperature change scenarios. According to results the temperature is likely to increases by 1.5 - 2.1°C by 2050, compared to the baseline temperature of 1961-1990. The model assesses more accurate values in northern districts of Sindh as compared to the coastal belt of Sindh. All the district of the Sindh province exhibit an increasing trend in the mean temperature scenarios and each decade seems to be warmer than the previous one. An understanding of the change in temperatures is very vital for various sectors such as weather forecasting, water, agriculture, and health, etc.

Keywords : PRECIS Model, real observed data, Arc GIS, interpolation techniques
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