



Effect of climate change on water resources of the Algerian Middle Cheliff basin

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ABSTRACT

The influence of climate change on the water resources of the middle Cheliff basin in Algeria was assessed with particular emphasis on the major issues related to water reserves. The Cheliff basin, which is one of the largest basins in the north of Algeria, is affected by water scarcity due to the expansion of industrial and agricultural activities with the population growth, on the one hand, and to a reduction in water resources caused by extreme droughts, on the other hand. The results of the current assessment showed a significant decrease in annual precipitation, ranging from 14 to 32%, and an increase in average temperature by 0.9°C over the past 20 years. A mathematical model predicted a flow deficit ranging from 20 to 25% by the year 2050. Hydroclimatic characterization indicated that rainfall deficits and the increase in temperature will have an immediate and significant negative impact on the surface water flow and groundwater recharge. It was recommended that water resources managers need to develop effective strategies for the rational use of water since this will affect social and economic development.

Keywords: Precipitation; Climate change; Water resources; Middle Cheliff basin; Modeling

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