The title (العنوان):

Seasonal rainfall variability in the southern Mediterranean border: Observations, regional model simulations and future climate projections

APA Citation (توثيق APA):

Taïbi Sabrina, Meddi Mohamed, Mahé Gil (2020). Seasonal rainfall variability in the southern Mediterranean border: Observations, regional model simulations and future climate projections . *Atmósfera,* vol 32 (n°1) , p. 39-54. DOI ou URL : https://www.scielo.org.mx/scielo.php?pid=S0187-62362019000100039&script=sci_arttext

Abstract: Particular attention has been given in recent years to precipitation and variations in climate change scenarios by modeling these phenomena at different timescales. Regional climate models enable assessing the impact of climate change at the regional and local scales. This study aims, firstly, to analyze the rainfall variability in northern Algeria, and secondly, to evaluate future seasonal rainfall variability using regional climate models of the ENSEMBLE project. Statistical tests and the bias method have been used for this study. Analysis of rainfall variability using statistical tests during the reference period (1961-1990) reveals a significant decrease of rainfall since the 1970s at the Tenes and Oran stations, located in the northwest of Algeria. This decrease occurs during the months of December and January (in winter), and March and April (in spring), and is associated to a reduction of 10-20 and 20-50 mm of daily rainfall, respectively, while the rainfall increases in the eastern region. Simulated data of 12 regional climate models have been compared to observations carried out during the reference period (1961-1990) using the bias method. Future seasonal rainfall variability was analyzed for two projection periods: 2021-2050 and 2070-2099. Most often, models underestimate the wet seasons and overestimate the dry seasons during the reference period. The models simulated a significant decrease of future rainfall in winter and spring over the two projected periods. Further investigations must be conducted to explain the underestimation of the models. It is also important to reconsider uncertainties that affect the results of this study.

Key words: Rainfall variability; regional climate models; Algeria; Mediterranean basin

Available from : https://www.scielo.org.mx/scielo.php?pid=S0187-62362019000100039&script=sci_arttext