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Contribution to the study of water stress on olive growing under the effect of climate change behind the soil and water conservation techniques in South East of Tunisia

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Climate change (CC) is a main issue of interest at the international as well as the national levels. It is important at this stage to guide the research to the analysis of impacts and adaptation strategies. The objective of this study is to evaluate the water stress of the olive within the context of CC behind the soil and water conservation techniques in the South East of Tunisia (watershed of Oum Zessar, Medenine) using hydrological modeling (HidroMORE model). Data on rainfall and temperature were collected from available stations, while those for future scenarios (Horizons 2030 and 2090) were obtained using the Coupled Model Intercomparison Project Phase 5 CMIP5 (GFDL HIRAM C360). Model parameterization was based from already conducted studies in the region while estimations have been made for the other case. In comparison with the reference period (1996-2005) and following the increase in temperature (1°C) and (5°C) and rainfall decrease of (5.4%) and (20%), ET0 recorded an increase of (3%) (9%) and ETCadj was reduced by (13%) and (30%), respectively for the 2030 and 2090 horizons. Thus, it is expected that the land suitable for olive cultivation will experience shrinkage and this cropping system would become increasingly problematic.