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Climate change impacts on crop yield in the Euro-Mediterranean region

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Agriculture is strongly influenced by climate variability, climate extremes and climate changes. Recent studies on past decades have identified and analysed the effects of climate variability and extremes on crop yields in the Euro-Mediterranean region. As these effects could be amplified in a changing climate context, it is essential to analyse available climate projections and investigate the possible impacts on European agriculture in terms of crop yield. In this study, five model runs from the Euro-CORDEX initiative under two scenarios (RCP4.5 and RCP8.5) have been used. Climate model data have been bias corrected and then used to feed a mechanistic crop growth model. The crop model has been run under different settings to better sample the intrinsic uncertainties. Among the main results, it is worth to report a weak but significant and spatially homogeneous increase in potential wheat yield at mid-century (under a CO_2 fertilisation effect scenario). While more complex changes seem to characterise potential maize yield, with large areas in the region showing a weak-to-moderate decrease.