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Climate change impacts on water resources in North African basins

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Countries in North Africa are facing water scarcity and a high inter-annual variability of precipitation. In this context, many dams have been built to collect surface water and improve the management of existing water resources. We present the main results of a recent MISTRALS-ENVIMED research project about the potential climate change impacts on water resources at the regional and basin scales. The project notably focuses on the uncertainties linked to the different components of the modelling chain required to produce hydrological scenarios. Climate change impacts on surface water resources are investigated using an ensemble of regional climate model simulations from the CORDEX experiment under different emission scenarios and different hydrological models, adapted to the context of data scarcity. Climate scenarios under RCP4.5 and RCP8.5 over North Africa indicate a future decrease in precipitation together with an increase in temperature that could have significant impacts on water resources. Indeed, a future decrease of surface water availability is expected in all major dam catchments, with a stronger decline over Morocco.