



## **Seasonal drought forecast. A catchment scale assessment in the island of Crete, Greece.**

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With the seasonal forecasting to have advanced in the last decade, it is already able to provide valuable information to management authorities to better anticipate water- and climate-related risks in the near future and improved preparedness. Water resources recharge and water consumption in Mediterranean exhibit a highly seasonal pattern region due to the precipitation occurring mainly in winter while the peak consumption to occur in the summer [1, 2]. Additionally, the steep orography of Crete island make weather forecast an even more difficult task. Here, two operational seasonal forecast systems' data, the European Centre for Medium-Range Weather Forecasts (ECMWF) System 4 and Met Office GloSea5 systems are tested for their ability to estimate the streamflow drought in a Mediterranean basin on the island of Crete. Both systems' data are downscaled and corrected for biases towards the observations. Different types of precipitation and temperature data pre-processing are tested and compared [3]. The two systems' data are forced to the calibrated HYPE hydrological model for the case study watershed [4]. Runoff results are assessed for their forecast skill to predict the streamflow drought state comparing to historical streamflow drought events. Results indicate that both ECMWF System 4 and GLOSEA 5 systems exhibit considerable ability to forecast the streamflow drought state with probably GloSea5 to exhibit a slightly better skill.

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