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Seasonal forecast of droughts: providing useful information to water management and agribusiness sector

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Land surface initial conditions are crucial sources of predictability at the seasonal time-scale, and the information they carry is necessary to catch the variability of land processes and related extremes. In particular, the potential for timely forecasts of the onset and possible evolution of droughts is a challenging topic, given their highly damaging effects on the economy, society and environment.
Seasonal predictions may provide an important contribution to mitigate drought impacts on human activities. Drought hazards, and the ability to alleviate them with advance warning, offer potentially valuable applications of climate forecast products. In this study, part of a EU Climate Kic Innovation Project, we develop metrics and indicators suitable to the needs of water management and agribusiness companies.
Results show that dynamical forecasts often provide added value to climatological forecasts of these extreme events. Skill is often concentrated in the first 30-45 days, and it is very difficult to demonstrate their effectiveness for longer time-scales. As for climate forecast of standard variables, skill is region and season-dependent. It is shown how multi-model approaches may also improve consistency, quality and value of drought seasonal predictions.