

**INSTITUTIONAL ANALYSIS OF ROBUSTNESS TO DROUGHTS: A LONGITUDINAL STUDY
OF THE CONTRIBUTION OF COLLECTIVE ACTION INSTITUTIONS TO WATER
ALLOCATION PERFORMANCE IN CONDITIONS OF RAINFALL VARIABILITY**

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ABSTRACT

According to climate change studies, rainfall in many sites along the Mediterranean area is expected to decrease notably in the next decades. Whether and how irrigated agriculture will cope with this future scenario is a question that concerns policy makers and researchers. This paper studies the recent history of a set of irrigation communities located along the Gállego River Watershed (Spain) to understand the potential contribution of collective action institutions to drought adaptation. For this purpose, the paper builds on the results of a longitudinal model regressing a crop water stress index on the use of bottom-up collective choice institutions and the nesting of irrigation management activities across governance levels, as well as on other physical and socio-economic variables. Findings are interpreted with regard to social-ecological resilience scholarship and the history and current state of the Spanish irrigation sector.

PALAVRA-CHAVE: Droughts, Over time analysis, Irrigation sector, Collective action, Institutions