Drought-impacted communities in social-ecological systems: exploration of different system states in Northeast Brazil.

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Our research applies ‘Social-Ecological Systems (SESs)’ concepts to analyse why and how events happening across spatial, jurisdictional and time scales and levels influence drought and their impacts in rural communities. To trace the evolution of drought and their impacts on the livelihood system, we conducted a drought diagnosis in the rural community of Riacho da Cruz in the Banabuiú basin in the semi-arid Northeast of Brazil. We analyse how the livelihood of this community reacts differently to drought events and why impacts of previous drought events either contribute to the adaptation of the livelihood system or its collapse. The SES theory helped us posit that it is the collective capacity of stakeholders (nested across the levels of the different spatial, temporal and decision scales of drought management) to manage their drought resilience, that determines whether the considered system adapts, collapses or shifts into a new stable state, in response to drought. Monitoring these factors that influence drought resilience can help us build drought (impact) indices that account for the spatial-temporal complexities of drought.