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A multiple streams analysis of drought policies in Ceará state, Brazil

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Interactions between society and water are complex, socio-hydrological systems are influenced by policies, which rarely are a simple linear response with the aim of providing the most efficient solution. In drought contexts, a new layer of complexity is added, considering the different uncertainties involved, related to the rainfall season, or the duration of multi-year drought events. We utilized the Multiple Streams Approach (MSA) theory to answer the following question: how do multi-year droughts function as focusing events? Focusing events may trigger greater attention to problems and solutions because they increase the likelihood that more organized interests, including some that are influential and powerful, could advocate policy change. MSA seeks to explain how policy changes. It assumes the policy change happens when three separate streams interact: (1) the problem stream, involving the emergence or recognition of a problem by society; (2) the policy stream, containing policy ideas and alternatives generated by specialists, researchers, politicians, and social actors; and (3) the politics stream, referring to the political, administrative, and legislative context favorable or unfavorable to developing certain actions to overcome the problem. The justification to apply the MSA lenses in this study is to understand the influences of multi-year drought events as a focusing event that triggered the process of policy change considering the subnational context of Ceará state in Brazil. In this study, the following methodological procedures were used: (a) historical overview of drought occurrence and the policy responses in Ceará; (b) data processing of hydrologic records (rainfall). We found three main different policy approaches to drought impacts: reactive, proactive, and drought preparedness policies. We found in some cases that multi-year droughts served as focusing events that opened windows of opportunities, triggering policy response changes, such as, collaboration, new problem framing, and increased political attention. Our findings have implications for the socio-hydrology field, as there is still significant scope for increasing the understanding of the influences of public policies in the context of coupled-humans systems, especially in the context of drought.