

GC13F-0725: Futuragua: Fostering Cross-Scale Knowledge to Inform Social-Environmental Decision Processes for Building Drought Resilience in Highly Seasonal Environments (Invited)

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Improving resilience to drought in complex social-environmental systems (SES) is extraordinarily important, particularly for rural tropical locations where small changes in climate regimes can have dramatic SES impacts. Efforts to build drought resilience must necessarily be planned and implemented within SES governance systems that involve linkages in water and land use administration from local to national levels. These efforts require knowledge and understanding that links climate and weather forecasts to regional and local hydrology, to social-economic and environmental systems, and to governance processes. In order to provide structure for such complex choices and investments, we argue that a focus on structured decision processes that involve linkages among science, technological perspectives, and public values conducted with agencies and stakeholders will provide a crucial framework for comparing and building insight for pursuing alternative courses of action to build drought resilience. This paper focuses on a regional case study in the seasonally-dry northwest region of Costa Rica, in watersheds rated as most threatened in the country in terms of drought. We present the overall framework guiding the transdisciplinary efforts to link scientific and technical understanding to public values, in order to foster civil society actions that lead to improved drought resilience. Initial efforts to characterize hydrological and climate regimes will be reported along with our approach to linking natural science findings, social inventories in terms of perspectives on SES, and the psychology and patterns of reliance on forecast information that provide the basis for characterizing public understanding. The overall linkage of technical and value information is focused on creating and comparing alternative actions that can potentially build resilience in short and long time frames by building decision making processes involving stakeholders, agencies and interested parties.

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