CROSS-LISTED: Simulation Complex Systems

SESSION: Dynamics of human-water systems: Learning from socio-hydrological data and modeling

TITLE: Climate change risk and farmers' behavior: Testing main driving factors from social learning in northern Italy

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ABSTRACT (ID# 1026478):

Because climate change is both a physical and social phenomenon, personal experience has been considered the first step to entail how individuals perceive climate change risk and which actions can be promoted to reduce their vulnerability. Considering that agriculture is affected by climate change in several ways, farmers can provide first-hand observations of climate change impacts and suggest better adaptation options. However, modeling farmers' behavior is a non-trivial task: personal experience is well recognized as a complex non-linear, multi-variate process due to the high heterogeneity and uncertainties in human cognition and decision-making processes. Furthermore, individual understandings of climate change are always contextualized within broader considerations, meaning that farmers are not 'blank slates' receiving information about climate change, but that information is always and inevitably filtered through values and worldviews. Despite the burgeoning of research on climate change, information about farmers' awareness and risk perception is not geographically homogenized and varies substantially among countries and regions. For example, studies from Global North regions are scarce and emphasize how farmers characterize themselves rather than how they perceive and react to climate change. Drawing on farmers' surveys in the Lombardy region (Italy), we provide an empirical study to pre-test the triple-loop analysis of farmers' behavior regarding climate change: awareness, perceived impacts, and adaptation measures and barriers. Applying descriptive statistics and considering socio-economic data and farm characteristics, we address two main research questions: 1) What are farmers' perceptions of climatic impacts and which responses do they promote? 2) How do personal experience and attitude change is conditioning farmers' adaptation capacity? Obtained results from accurate bottom-up knowledge on farmers' behavior may increase policy-makers' and managers' understanding of climate change and re-think local policies, which is essential to address agricultural risks in climate change hotspots.