

## **Tracing society in climate change: Societal negotiations and physical dynamics of water under climate change conditions in the Cordillera Blanca region, Peru**

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Natural scientists observe and project changes in precipitation and temperature at different spatio-temporal scales and investigate impacts on glaciers and hydrological regimes. Simultaneously, social groups experience ecological phenomena as linked to climate change and integrate them into their understanding of nature and their logics of action, while political actors refer to scientific results as legitimization to focus on adaptation and mitigation strategies on global, national and regional/local level. However, natural and socio-political changes on various scales (regarding time and space) are not directly interlinked, but are communicated by energy and material flows, by discourses, power relations and institutional regulations. In this context, it remains still unclear how natural dynamics are (dis)entangled with societal processes in their historical dimensions and in their interrelations from global via national to regional and local scales.

Considering the Cordillera Blanca region in Peru as an example, we analyze the intertwining of scales (global, national, regional, local) and spheres (natural, political, societal) to detect entanglements and disconnections of observed processes. Using the methodology of a time line, we present precipitation variability and glacier recession at different scales, estimate qualitative water availability and investigate the links to the implementation of international and national political programs on climate change adaptation in the Cordillera Blanca region focusing on water and agrarian programs. Finally, we include supposedly contradictory reports of rural population on climate change and related impacts on water availability and agricultural production to analyze the (dis)entanglement due to changing power relations and dominant discourses.