



Cryosphere risks: an opportunity for climate litigation and climate justice?

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The mountain cryosphere is particularly strongly affected by climate change, and associated negative impacts become increasingly visible and are observed globally in the high mountain regions. Glacier shrinkage of the last decades has been attributed to a varying but substantial extent to anthropogenic climate change and can thus be traced to the large greenhouse gas emitters, both countries or private companies. Those affected by the negative impacts of climate change and cryosphere change are predominantly located in the developing world, yet have typically little contributed to anthropogenic climate change. Therefore, fundamental questions of responsibility and justice are raised but largely unsolved.

An additional avenue that has been attempted is bringing cases to court to sue large emitters and claim compensation for damages and loss or risks. Most of the cases have been declined so far by courts with the exception of a citizen in Huaraz in the Andes of Peru who sued the large German energy producer RWE over the risk of a devastating flood from an outburst (GLOF) of glacial Lake Palcacocha, at an amount proportional to the share of cumulative emissions of the German company. A State court in Germany recently admitted the case which is considered a historical breakthrough in climate litigation because it implies that the court acknowledges the basic legal responsibilities of (large) emitters for (potential) loss and damage caused by anthropogenic climate change elsewhere on the globe – given that the causal relation between emissions and damage or risk can be established. The court will ask for scientific evidence and expertise on the causal relation between damage or risk and emissions. This implies a major interdisciplinary attribution research effort but current science is only prepared in a limited way to respond to this type of questions. Here we outline how such an approach could be designed and implemented and what the potential consequences are for climate litigation in the global mountain cryosphere. We also address the question whether an interdisciplinary and comprehensive attribution approach can support identification of copying strategies in line with justice principles.