

## Submitted Abstract

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<b>Title</b>	Leverage Points For Up And Out-Scaling Nature-Based Solutions To Climate Change Adaptation In The French Alps.
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## Abstract

Mountains act as sentinels of climate change, both in terms of the impacts they are experiencing and the ways in which mountain people are adapting to them. Science can support these societal transitions towards sustainability by engaging with local actors in the co-construction of plausible solutions. Nature-based solutions (NBS) were portrayed as initiatives that can address these double social and environmental challenges, as part of transformation pathways to meet Sustainable development goals (SDGs). NBS consist of “actions to protect, sustainably manage, and restore natural or modified ecosystems to address societal challenges by simultaneously providing human well-being and biodiversity benefits”. However, the implementation of NBS is still limited for climate change adaptation, and they are highly context specific and rarely replicated, moreover they are not always implemented in places where risks are the highest. Here, we seek to better understand the fundamental processes that govern NBS initiatives up-scaling (impacting laws and policy) and out-scaling (impacting greater numbers) and how it contributes to transformation pathways.

After having identified and characterised more than 200 NBS initiatives across the Alpine arc, the PORTAL project aims to identify the elements needed to up and out-scale NBS initiatives and therefore contributes to sustainability and climate change adaptation goals. The case study, the Grenoble Basin located in the French Alps, is characterised by a gradient of urbanisation and human activity between lowland and high mountain areas and between dense urban centres and integral natural reserves.

A transdisciplinary approach will be implemented involving institutional and operational actors as well as NBS initiatives holders. Interviews and focus groups will be carried out, to identify the leverage points to the up and out-scaling of NBS in mountain regions. This will allow exploring how values, power relations, use of knowledge and technology, and the institutional, economic, social and ecological context, could facilitate transformations through the scaling of NBS implementation.

These leverage points will be integrated into a broader normative scenario approach aiming at collectively design pathways of NBS scaling to tackle the main climate risks (droughts, landslides, floods, food security) and reach objectives of sustainable development co-defined for this region in short and medium-term (2050).