



Increasing socio-ecological resilience of mountains

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Land use changes in the Alps

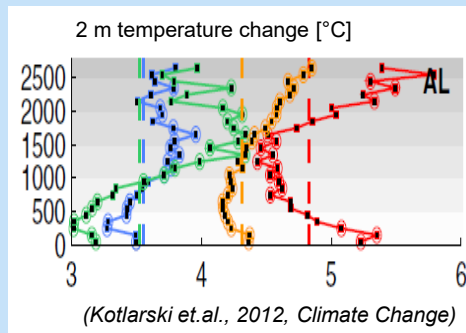
Main drivers



Urbanization

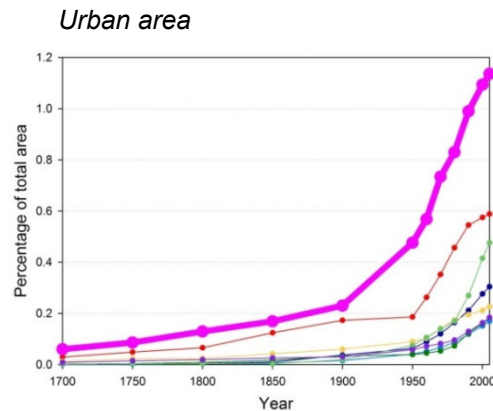
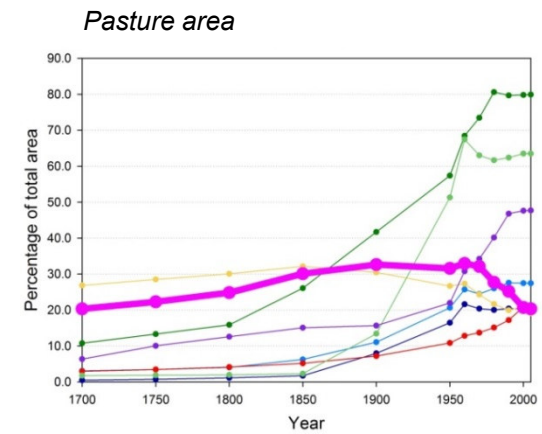
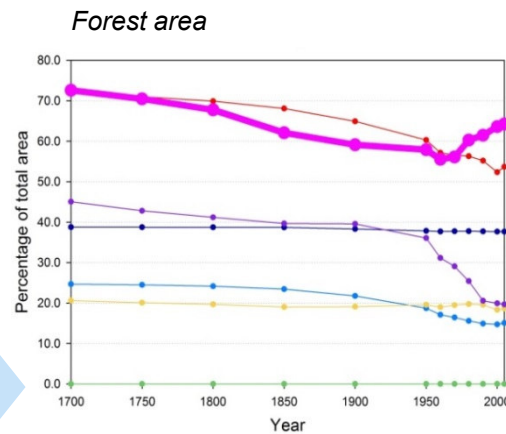


Land abandonment



Climate change

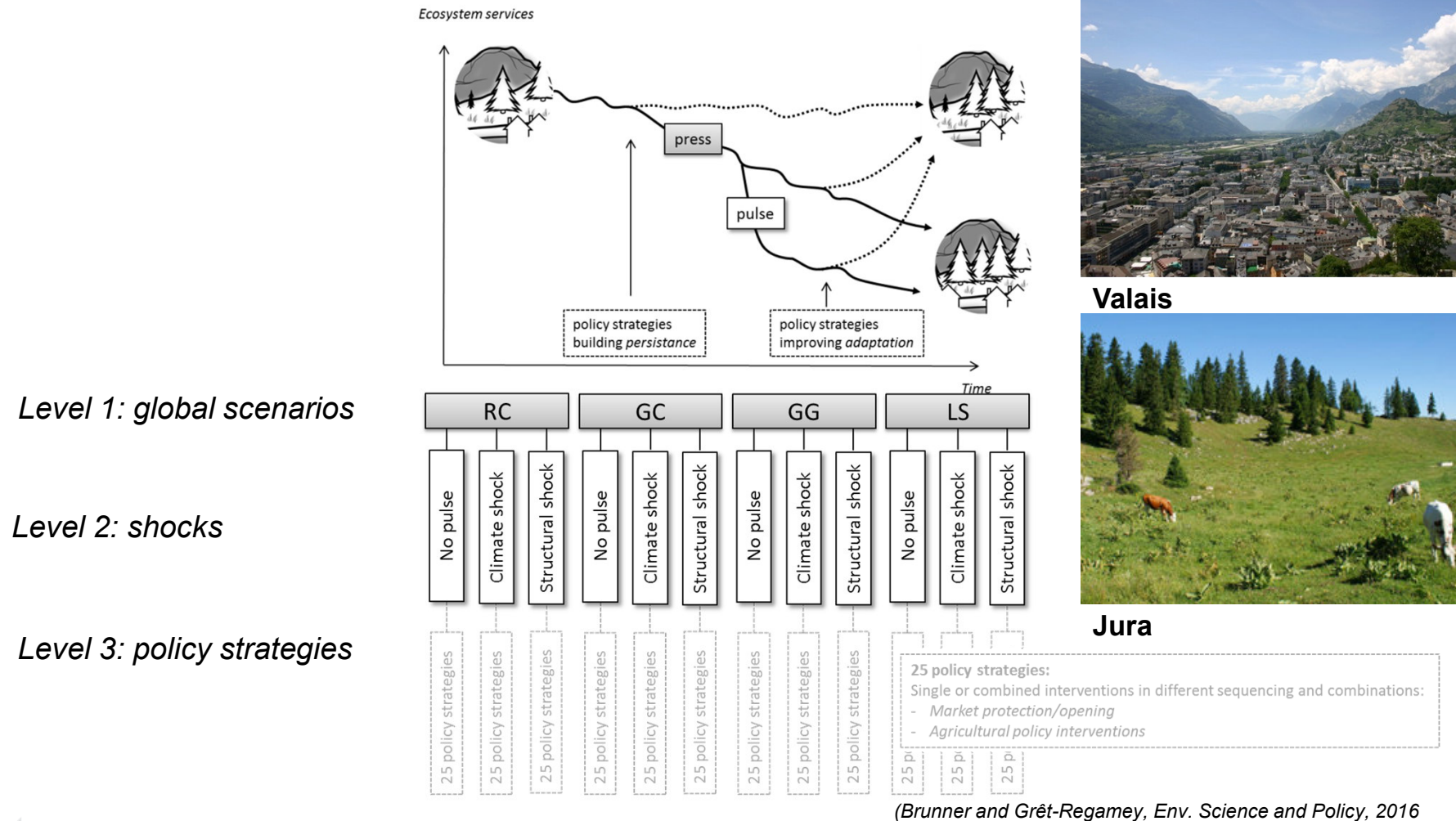
Land use change since 1700



- Rocky Mountains
- Andes
- Carpathians
- Iberian Peninsula
- Atlas
- Drakensberg
- Himalaya
- Alps

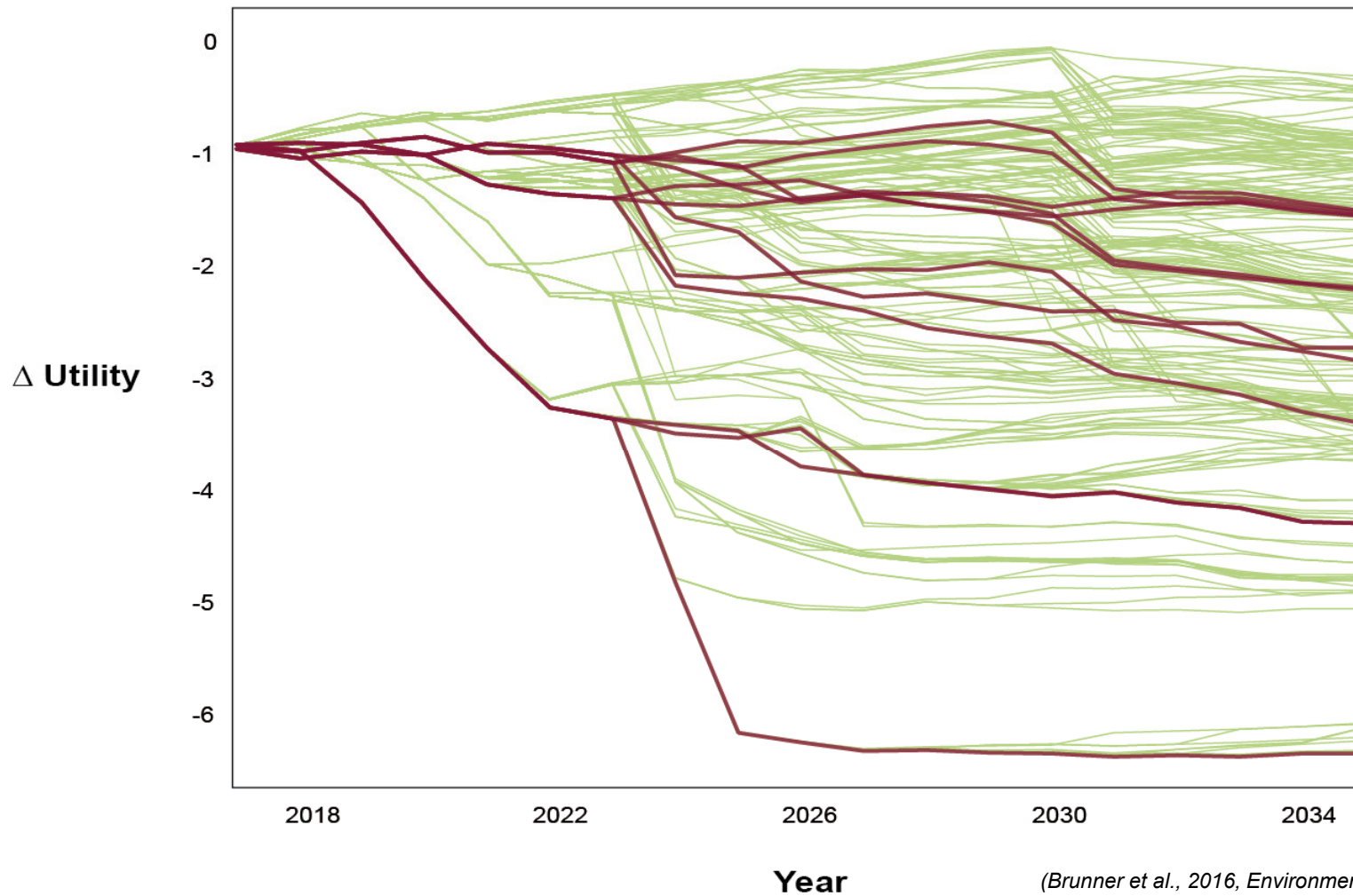
Can management and/or policy instruments buffer global change and secure demanded ecosystem services?

Backcasting using socio-ecological modeling



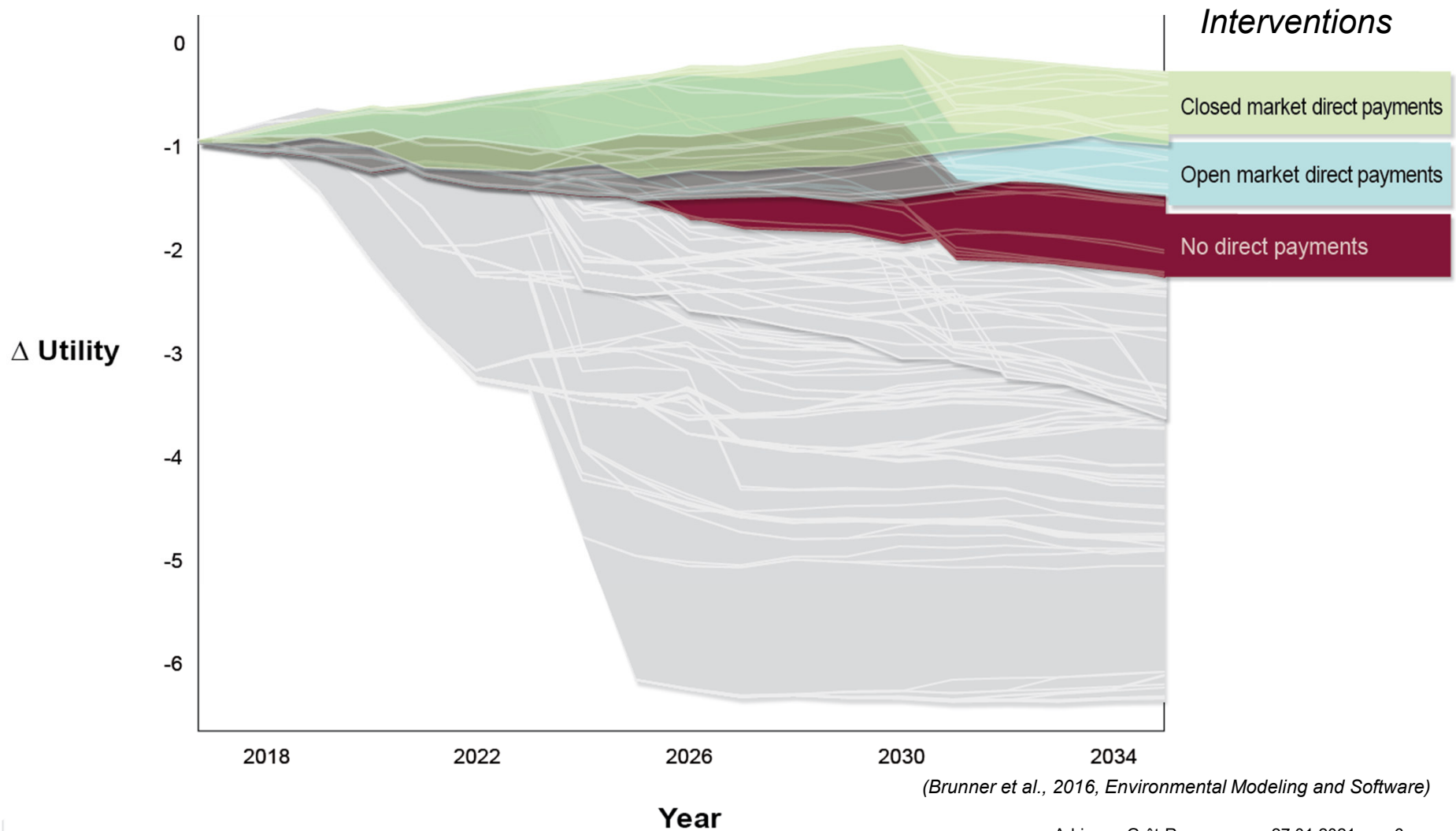
(Brunner and Grêt-Regamey, *Env. Science and Policy*, 2016)

Pathways to demanded ecosystem services

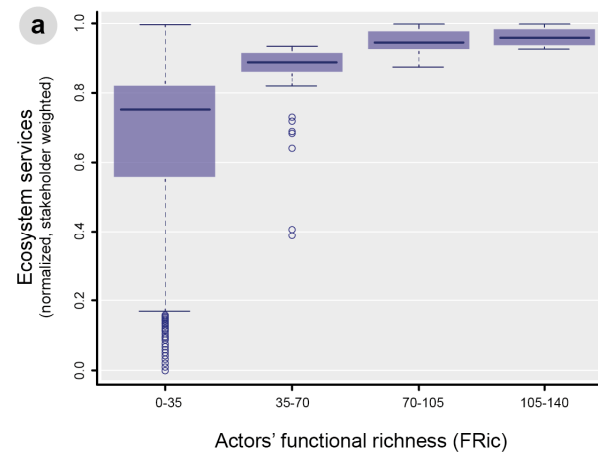
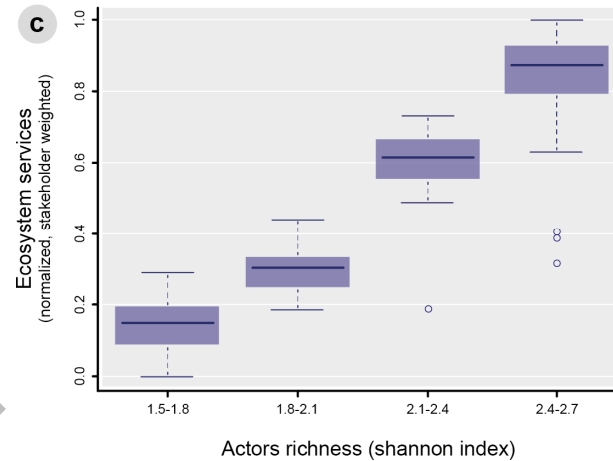
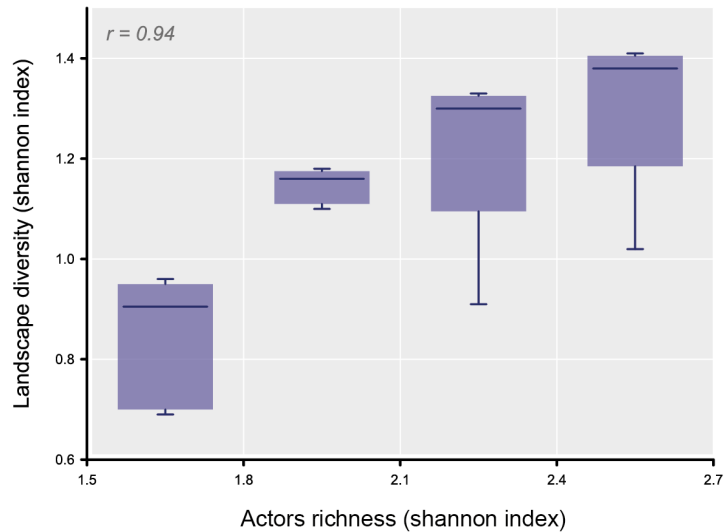


(Brunner et al., 2016, *Environmental Modeling and Software*)

Pathways to demanded ecosystem services



Characteristics of mountain socio-ecological systems

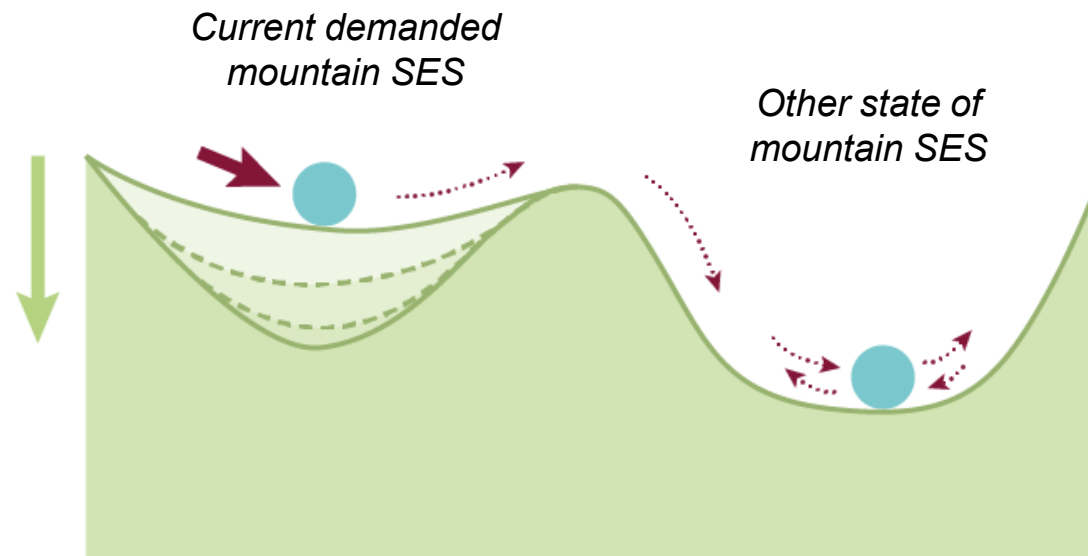


Grêt-Regamey et al., *Nature Sustainability*, 2019

Conclusions

YES, the resilience of mountain socio-ecological systems to weak global change can be enhanced by....

- 1 Management at the landscape scale
- 2 Early interventions
- 3 Securing high biodiversity and actor's diversity



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