

## Modeling the interactions between land management and landscape processes in mountainous regions

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Land change and more subtle land management change can have severe impact on active landscape processes. Well known examples from mountainous regions are deforested areas becoming susceptible for land sliding and erosion during intensive rainfall events. On the other hand do land managers take landscape processes into account when making decisions on land use management. This interaction of decision making and landscape processes dynamics can lead to specific spatial patterns of land use/cover.

Spatial-temporal explicit modeling of landscape process dynamics such as water and soil redistribution tillage and mass movements within a landscape, give insight in the performance of agronomic systems within a dynamic landscape context. Interactions between land management and landscape processes are evaluated with a spatially explicit modeling framework (LAPSUS). Another case study explores the interaction between land use change and landscape process dynamics. Only after a spatially explicit multi-scale system analysis and explorative landscape process modeling scenarios, can more sustainable landscape use plans be designed.

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