Land cover dynamics and geomorphic processes in hillslope environments: from data acquisition to modelling and management practices
• **Land cover** plays a key role for geomorphic processes in steep-land environments.
• **Land cover** exhibits significant effects on landscape evolution.
• **Land cover** data becomes of fundamental importance in many applications for assessing soil erosion loss and landslide activity at difference scales, from local to global analysis.

Thus, most investigations aim to detect, observe, analyse, model or predict geomorphic and landform-shaping processes.

This session is designed to cluster the most recent scientific researches on the analyses, modelling and prediction of soil erosion and landslide processes that are directly linked to land cover dynamics.
Some examples...

Many thanks to Massimiliano Bordoni
University of Pavia (Italy)

https://www.researchgate.net/profile/Massimiliano_Bordoni
The role of land use (change) in slope stability

- Abandonment of previously cultivated slopes and changes in agricultural practices

Woods  Vineyards  Abandoned vineyards

Multi-temporal land use changes analysis

The event of 27-28 April 2009 in Oltrepò Pavese

Before
After

References
The role of land use (change) in soil hydrology

Land cover affects the soil hydrology

Monitoring

Modelling

References
Bordoni et al. 2017; EM&A 10.1007/s10666-017-9586-y
Bordoni et al. 2020; BEGE 10.1007/s10064-020-01783-1

Fig. 5. Analyzed land uses. a) Vineyards with total tillage. b) Vineyards with tillage. c) Vineyards with permanent grass cover. d) Vineyards with alternating tillage grass. e) Sowed areas. f) Shrublands developed in abandoned areas. g) Woodlands.

Legend:
- VN-FF: Vineyards with no tillage
- VN-TT: Vineyards with total tillage
- VN-PGC: Vineyards with permanent grass cover
- VN-ALT: Vineyards with alternating tillage grass
- SA: Sowed areas
- UNC: Uncultivated areas
- WOOD: Woodlands
The role of land use (change) in sediment connectivity

Sediment connectivity strongly affected by land use

Modifications of sediment connectivity according to land use and drainage network changes

References
Persichillo et al. 2018; CATENA 10.1016/j.catena.2017.09.025

C.I. LEGEND
- Low
- Medium - low
- Medium - high
- High

References
Cislaghi & Bischetti (2019); STOTEN 10.1016/j.scitotenv.2018.10.318
The role of land use (change) in agricultural management

Different agricultural management influences..

soil properties

root density

prediction + mitigation activity

landslide susceptibility

References
Bordoni et al. 2019; STOTEN
The role of land use (change) in pastures

Landslides in grasslands

Over time

Observing soil and root properties

Pasture management

References
Cislaghi et al. 2019; CATENA 10.1016/j.catena.2019.104086
Convener: Dr. Elmar M. Schmaltz
Co-conveners: Dr. Alessio Cislaghi, Dr. Stefan Steger
Announcement

Dr. Elmar Schmaltz
Co-convener to our session as guest editors

dr invite

the authors to submit a manuscript on these or related topics, to the special issue:

Special Issue
"Land Cover Dynamics and Geomorphic Processes in Hillslope Environments: From Data Acquisition to Modelling and Management Practices"

A special issue of Water (ISSN 2073-4441) IF 2.52, Q2

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