



## **Land use/cover changes in European mountain areas: identifying links between global driving forces and local consequences**

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Minor land use/cover changes in mountain areas can aggravate the consequences of hydro-meteorological hazards such as landslides, avalanches, rockfall and flash floods. What is more, they change the provisioning of ecosystem services; also as their recovery after anthropogenic induced changes in mountains are slower or not occurring at all due to harsh climate and soil conditions. Examples of these changes are urbanization in high risk areas or deforestation on slopes. To understand the driving forces behind land use/cover changes in European mountain areas, the focus is on the two case study areas: The Val Canale valley in the Italian Alps and the Buzau valley in the Romanian Carpathians.

Land use/cover changes were analyzed in the recent decades applying various remote sensing techniques, such as satellite imagery classification and visual interpretation, as well as integration of various databases (e.g. forestry, spatial planning and cadaster plans). Instead of identifying the statistical significance of particular variables (e.g. population change), the links between different driving forces of global change (e.g. political and policy changes, infrastructural plans) and local socio-economic variables were investigated further through interviewing local and regional stakeholders.

The results show how both areas differ in the consequences of global changes in terms of land use/cover change. The Italian area witnessed a trajectory from a commercially active and competitive area, to an area with a large portion of abandoned commercial, customs, industrial and mining zones. These processes were accompanied by the expansion of settlements comprised mostly of secondary housing on areas with high risk, resulting in catastrophic consequences in recent flash floods and debris flows events. The Romanian site also witnessed a breakdown of local commercial and industrial activities. Together with land ownership reforms, this has resulted in the emergence of subsistence farming and illegal logging. This intensification of activities has mostly affected land on slopes in an area where over 40 % of the area is subject to landslides.

Relatively, the prevailing land use/cover change process in both areas, as usually in most European mountain areas, is reforestation. Small-scale changes however were most important in terms of negative consequences. Therefore we think it is necessary to focus on the local scale when identifying possible future negative consequences of land use/cover change.

### **Acknowledgement**

This work is a part of the CHANGES project (Changing hydro-meteorological risks – as Analysed by a New Generation of European Scientists), a Marie Curie Initial Training Network, funded by the European Community's 7<sup>th</sup> Framework Programme FP7/2007-2013 under Grant Agreement No. 263953.