



## **Mountain risks – assessment and management, myth and reality**

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Risk is defined by a function of probability of occurrence of a potentially hazardous process, the values at risk exposed and the related vulnerability of elements at risk. This axiomatic paradigm formed basis for generations of scholars in the field and resulted in numerous studies on a local, regional and national level; and even beyond.

Based on influencing work tracing back to periods well before the IDNDR, standardised procedures were published to deal with natural hazard risk, and to address risk analysis, assessment and management in an objective and reproducible manner on different scales. In Alpine areas different national and federal legal regulations came into force, and the respective authorities responsible for the dealing with natural hazards introduced guidelines and regulations. As a result, scientists as well as national authorities introduced the “cycle of integral risk management”, which is increasingly recited by political decision makers and other actors in the field. Concepts were developed to enhance public risk awareness and community resilience, and to develop concepts of risk governance. In recent decades, emerging key words within this field of research often included prefixes such as “interdisciplinary” and “multi-disciplinary”.

However, from a practical point of view, risk management is still focused on hazard analysis, in a row with technical mitigation and land-use regulations. An analysis of values at risk exposed is only necessary to prove cost-efficiency of structural mitigation. Incentives for risk-minimising actions are restricted due to a lack of suitable packages of measures as well as to budgetary restrictions. Furthermore, the application of the concept of risk is limited due to inherent problems related to design events.

Vulnerability of elements at risk is still not sufficiently well known, and ranges and uncertainties in the results are regularly not fully communicated. Interdisciplinary or even multi-disciplinary approaches are beyond reach since multiple legal constraints exist in different Alpine countries: In parts of Italy dealing with natural hazards is restricted to geologists or holders of a PhD in agriculture and forestry, in Austria the respective job requirements include a Master's degree in Mountain Risk Engineering, whereas in Switzerland the field is dominated by forest engineers.

To conclude, a considerable gap still exists between theory and practice and between myth and reality in risk management with respect to mountain hazards. It is a challenge for scientists, practitioners as well as political decision makers to bridge this gap.