



Influence of national rockfall hazard guidelines on land-use planning

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Basic principles of living with natural risks are established according to the experience of each country in facing this problem. The strategies adopted for evaluating rockfall hazards and for reducing the potential risk they represent may therefore lead to the development of quite different guidelines. In fact, despite the approach defined for this purpose in most cases consists in coupling intensity and frequency of the process, the diagram used for merging this information and/or the threshold values proposed for the two parameters significantly change. As a consequence, the possible measures to be taken for coping with rockfalls can be strongly influenced, both in terms of land-use planning and design of protection measures.

In the framework of the European Project “Mountain Risks: from prediction to management and governance”, funded by the European Commission, this paper aims at studying how several different national strategies for facing rockfall hazards may influence hazard zoning results and land-use planning, focusing in particular on some intensity-frequency-based guidelines used in Switzerland, Principality of Andorra and France.

The presentation of the factors driving the definition of hazard in each considered country will be followed by the explanation of how classes of hazard are established, and which are the regulations for the development of the territory that correspond to the several classes of hazard proposed in each case.

Afterwards, the 2D application of one methodology for hazard zoning will be performed in a study area in Switzerland, following the three different sets of guidelines.

The analysis of the results underline how the implementation of the criteria which define the hazard, its intensity and classification do play an important role in the zoning procedure and land-use regulations, as the latter are closely connected to the different level of risk perception and acceptance characterising a given community.

Therefore, the remarkable differences obtained from this comparison suggest that, if setting standards in hazard assessment and zoning methods may be possible at least in terms of approach (e.g. intensity-frequency), this is not sufficient for overstepping the differences in the zoning results and land-planning, because of the diverse guidelines each country developed.

On the other hand, comparison studies could provide an important help in better understanding and in possibly improving the quality and applicability of risk management procedures.