

COOPERATIVE LANDSLIDE RISK MANAGEMENT – A NEW CONCEPT?

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CONTEXT

Severe economic damage and fatalities are caused by landslide events worldwide. If evolving risky situations would be known in advance, landslide consequences could be significantly minimised. Risky situations are commonly addressed by precautionary approaches such as hazard and risk zoning or, in severe cases, by early warning systems. Commonly, landslide early warning schemes are extremely expensive technical systems and give details on single slopes only with high associated uncertainties. If these early warning systems include regional weather forecasts, regional information can be provided, e.g. the probability that a landslide will occur tomorrow somewhere in the region. From a management perspective this information is helpful, however, also limited in use because effective countermeasures for specific sites cannot be organised.

AIM

Due to these limitations of existing early warning systems, the concept of a cooperative landslide risk management is suggested. Often, large landslides do not fail catastrophically without any warnings. Environmental changes within landslide prone areas can be observed beforehand, e.g. opening of cracks. Thus, it is important to gather such specific information in order to be able to organise effective mitigation measures.

The aim of the new concept is to use all potential available information which especially might be collected by different groups of local people.

SYSTEM

The suggested concept of landslide risk management includes in particular local people regularly visiting landslide prone regions for other reasons (e.g. people from forestry, road and railway maintenance, hiking clubs, landscape guards, residents, etc.).

In most cases, these local people will be the first who recognise changes in the environment like e.g. the opening of cracks.

The idea is to gather all potentially available information and to use this for landslide risk management options. The quality of the collected information must be controlled. First, this should be done by special trained local experts like the foresters and/or the local building authority.

It has to be ensured that the information collected and controlled by such local experts is transferred to the responsible administration, e.g. the Geological Survey. There, the reliability of the information should be checked again and if appropriate, more detailed studies by experts and respective countermeasures can be organised in cooperation with local and regional authorities. The concept of the cooperative risk management is shown in Fig. 1.

To be able to react as soon as reasonable possible, it is crucial to develop a fast and reliable communication chain. The integration of web-based techniques might also be considered.

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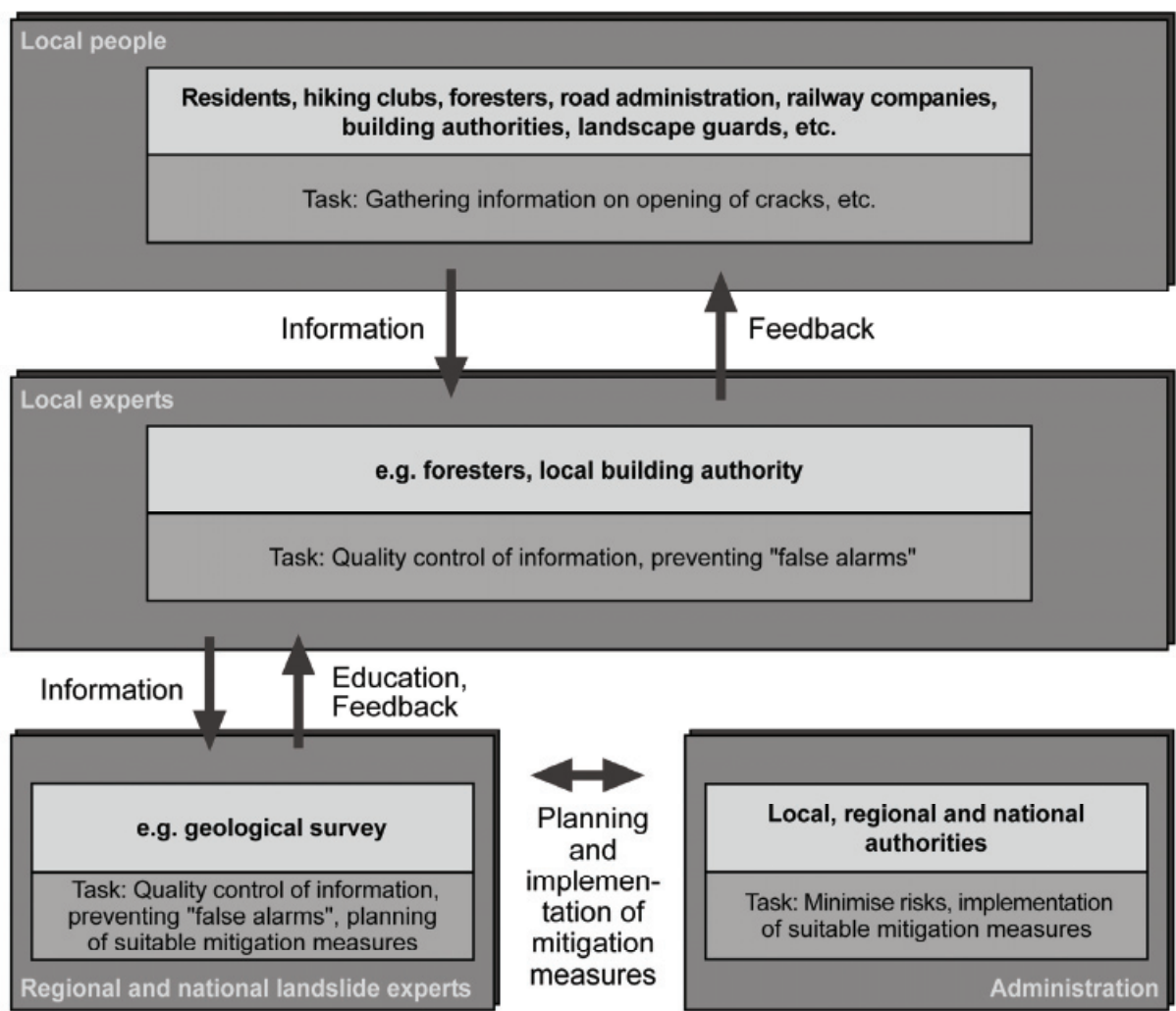


Fig. 1: The concept of the cooperative landslide risk management

APPLICABILITY

The future applicability of the developed concept is partly supported by the results of qualitative interviews in specific test regions. Especially the foresters were interested in supporting this concept of a cooperative landslide risk management. Further interviews have to be carried out to check the willingness of the various players to participate in such a system and to prove the potential of implementation.

In general, it seems that the suggested concept has the potential to be implemented and to be transferred to other phenomena as well.

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