



EconoMe-Develop – a calculation tool for multi-risk assessment and benefit-cost-analysis

M. Bründl

WSL Institute for Snow and Avalanche Research SLF, RU Avalanches and Prevention, Davos-Dorf, Switzerland
(bruendl@slf.ch)

Public money is used to finance the protection of human life, material assets and the environment against natural hazards. This limited resource should be used in a way that it achieves the maximum possible effect by minimizing as many risks as possible. Hence, decision-makers are facing the question which mitigation measures should be prioritised. Benefit-Cost-Analysis (BCA) is a recognized method for determining the economic efficiency of investments in mitigation measures.

In Switzerland, the Federal Office for the Environment (FOEN) judges the benefit-cost-ratio of mitigation projects on the base of the results of the calculation tool “EconoMe” [1]. The check of the economic efficiency of mitigation projects with an investment of more than 1 million CHF (800,000 EUR) by using “EconoMe” is mandatory since 2008 in Switzerland. Within “EconoMe”, most calculation parameters cannot be changed by the user allowing for comparable results.

Based on the risk guideline “RIKO” [2] an extended version of the operational version of “EconoMe”, called “EconoMe-Develop” was developed. “EconoMe-Develop” is able to deal with various natural hazard processes and thus allows multi-risk assessments, since all restrictions of the operational version of “EconoMe” like e.g. the number of scenarios and expositions, vulnerability, spatial probability of processes and probability of presence of objects, are not existing. Additionally, the influences of uncertainty of calculation factors, like e.g. vulnerability, on the final results can be determined. “EconoMe-Develop” offers import and export of data, e.g. results of GIS-analysis. The possibility for adapting the tool to user specific requirements makes EconoMe-Develop an easy-to-use tool for risk assessment and assessment of economic efficiency of mitigation projects for risk experts. In the paper we will present the most important features of the tool and we will illustrate the application by a practical example.

References

- [1] BAFU (2011). EconoMe. Wirksamkeit und Wirtschaftlichkeit von Schutzmassnahmen. Bundesamt für Umwelt. www.econome.admin.ch (last access 16th January 2012).
- [2] Bründl, M., Romang, H. E., Bischof, N., and Rheinberger, C. M. (2009). The risk concept and its application in natural hazard risk management in Switzerland. *Nat. Hazards Earth Syst. Sci.*, 9(3), 801-813.