



IFKIS – ten years of experience with the intercantonal early warning and crisis information system as a good-practice example for local capacity building



Michael Bründl and Lukas Stoffel

WSL Institute for Snow and Avalanche Research SLF, 7260 Davos Dorf, Switzerland
bruendl@slf.ch, stoffell@slf.ch

Motivation

The avalanche winter 1999 in Switzerland caused 17 fatalities and damages of over 500 million Euro.

The event analysis indicated that technical measures, land use planning and protection forests proved to work successful. Problems were identified in organisational measures.

Communities and organisations with less avalanche experience had faced problems in managing the extraordinary event.

The main deficiencies were less experienced or even missing local avalanche safety services and missing information and communication among safety services and from safety services to the public.

As a consequence, the project “Intercantonal Early Warning and Crisis Information System IFKIS” was initialised aiming at developing a concept for education courses, a concept for compulsory booklets and an information system (Bründl et al., 2004). The project was finished in 2002. The results are implemented in practice since 10 years. The experience from 10 years allows the question:

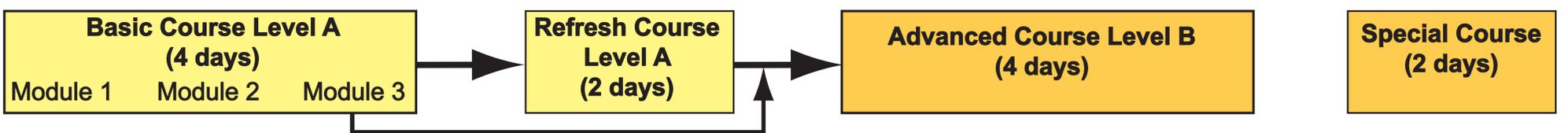
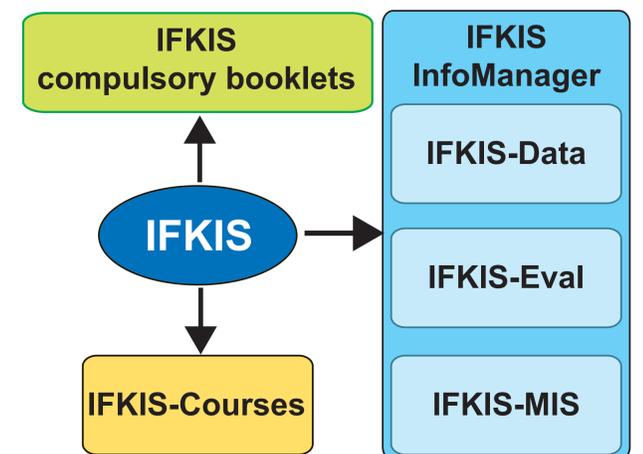
How did results of the project IFKIS contribute to local capacity building?

Education courses for Avalanche Safety Services in local or regional authorities and organisations (e.g. highway department) or communities

Since 2000 two or three courses took place every winter either in German, French or Italian. In total, 1000 participants from all regions of the Swiss Alps attended between 2000 - 2011. At **level A**, several modules are offered. In **module A**, participants are educated in observing the snow and avalanche situation and transmitting the data to the national avalanche forecasting service at the Institute for Snow and Avalanche Research SLF. In **module B**, participants are educating in snow profiling and terrain assessment. In **module C**, participants are trained in combining all available information and data in order to make safety decision in settlements, for traffic routes and for infrastructure facilities (e.g. power plants).

At **level B**, decision makers are educated in making and organising safety measures (e.g. closures, artificial avalanche release). The information system IFKIS-InfoManager supports the information exchange between various safety services in regions and communities and allows for a two-way communication among safety services and from safety services to the National avalanche forecasting service at SLF.

Components of IFKIS



Education and training courses - a contribution to social capacity building

The typology of social capacities developed in CapHaz-Net (Kuhlicke et al., 2011) allows for linking the experiences with IFKIS for avalanche safety services to components of social capacity building.

Knowledge capacities

A network of well-educated observers and safety services allows for:
- autonomous assessment of local avalanche situations by safety services in communities;
- improved knowledge about the actual snow and avalanche situation in regions at National Avalanche Warning Service SLF.

Motivational capacities

A periodical refreshment of knowledge of local avalanche safety services kept motivation on a high level. The frequent contact with the National Avalanche Warning Service SLF strengthened the self-responsibility of local services.

Network capacities

The knowledge exchange between participants during the courses and the cultivation of personal relations is an important resource for dealing with critical avalanche situations.

Economic capacities

Financial support by the Federal Office for the Environment for developing the course concept and for the conduction of the yearly courses was crucial for the success. Without this support, SLF wouldn't be able to offer the courses on a regular basis at a price affordable by communities.

Institutional capacities

Compulsory booklets and the education and training courses strengthened the subsidiary structure for risk management. Communities can act autonomously.

Procedural capacities

The compulsory booklets and the evaluation form helped to establish safety services especially with less avalanche experience and supported them to structure their work and to manage critical avalanche situations.

Conclusions

- 10 years experience with IFKIS indicate that the combination of education and training courses, the structure of compulsory booklets and the information system for two-way communication considerably enhanced the local capacity to deal with critical avalanche situations.
- Experiences from winters with critical avalanche situations (e.g. 2011/12) do confirm this conclusion.
- The success of the project IFKIS serves as good practice example for the development of the Common Information Platform GIN (Heil et al., 2010) and the establishment of a network for natural hazard observers in communities in Switzerland.

References

Bründl, M., Etter, H.-J., Steiniger, M., Klingler, C., Rhyner, J., and Ammann, W. J. (2004). IFKIS – a basis for managing avalanche risk in settlements and on roads in Switzerland. *Natural Hazards and Earth System Sciences*, 4, 257–262.
Heil, B., Petzold, Romang, H., and Hess, J. (2010). The common information platform for natural hazards in Switzerland. *Natural Hazards*. doi: 10.1007/s11069-010-9606-6.
Kuhlicke, Ch. et al., (2011). Perspectives on social capacity building for natural hazards: outlining an emerging field of research and practice in Europe. *Environmental Science & Policy*, 14, 804–814.

The project IFKIS is supported by the Federal Office for the Environment (FOEN). We thank for the continuous support of this project.

