Avalanche commissions in Austria at the interface between locals and authorities

Embedding, decision process and quality assurance

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ABSTRACT

In former times avalanche risk assessment was predominantly influenced by outcomes of snow cover tests and by information obtained by the observation of local weather and snow conditions. Nowadays technical development enables us to gather in short sequences detailed data about snow depth, wind and temperature all over the Alps. Nevertheless, all technical progress doesn't replace local observations, local experience and risk assessments based on local knowledge.

Recently often discussed and promoted is the idea of regional risk governance that addresses a balance between governmental risk prevention and that of civil society. While solitary risk prevention seems to lie in many cases far in the future, it is daily practiced in Austrians avalanche risk management. The avalanche warning services are state run and responsible to offer forecasts daily. Their focus is on the regional level. In contrast to that, avalanche commissions are volunteers who are assessing the local level over a whole winter season.

In this paper we want to focus on the voluntary avalanche risk management. Thus, we explain the avalanche commissions embedding in the larger risk prevention network, their responsibilities and how their decision process look like. Finally, we discuss already realized actions and further possibilities to assure quality in volunteer services.

Structure of Austrians avalanche risk management

We want to explain in brief the structure of Austrians avalanche risk management. Figure 1 visualizes the Styrian case, that is quite similar to other federal states in Austria. Long term hazard zone planning at the local and regional level, avalanche danger assessment at the regional level and national and international risk prevention is managed by the state. This means, that avalanche risk prevention is predominantly organized by public authority. However, civil engagement (observer, avalanche commissions) is crucial for a successful and complete risk assessment.

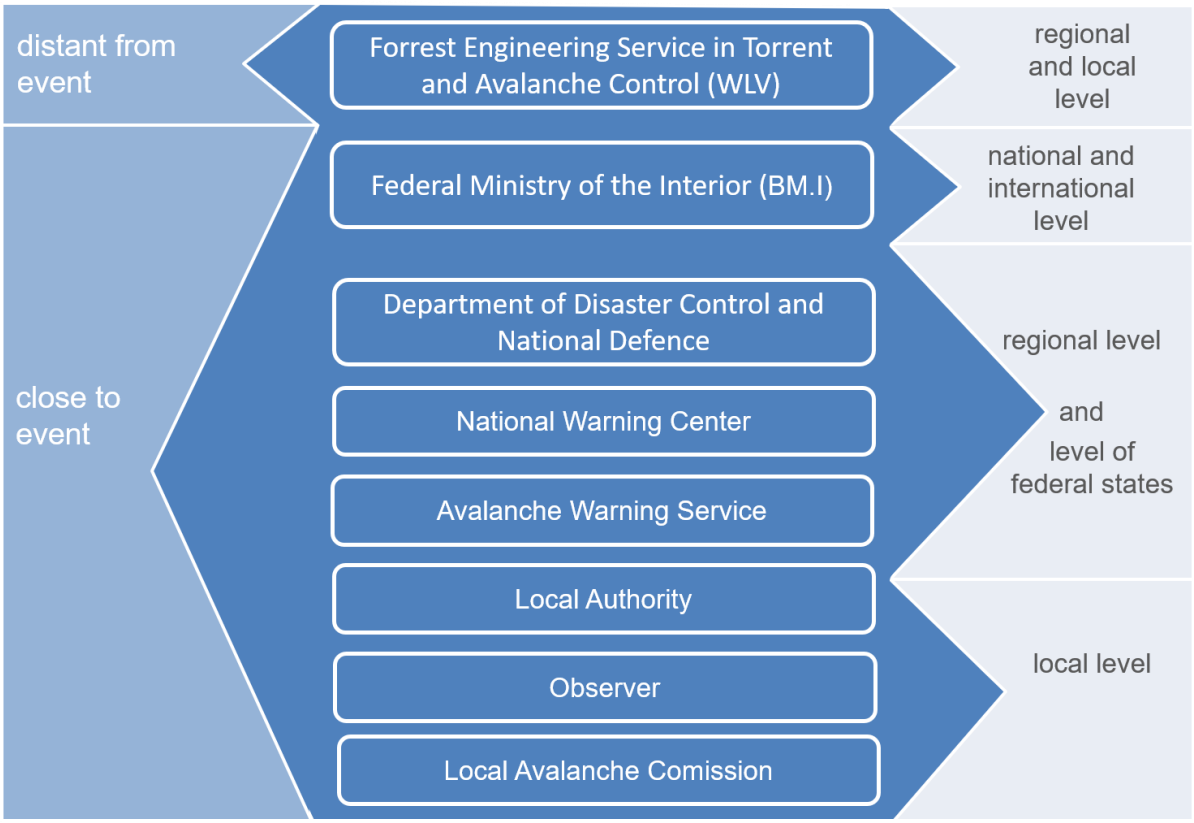

Figure 1: Avalanche risk prevention structure in Styria, Austria.

Collaborative risk prevention demands a good interconnectedness within the expert network consisting of volunteers and official representatives. Avalanche commissions become regularly educated by the Departments of Disaster Control. Lecturers are predominantly members of the state run risk prevention institutions, e.g. the avalanche warning service, the alpine police, the Forrest Engineering Service in Torrent and Avalanche Control etc. Thus, training sessions for avalanche commissions have two functions: first, they ensure professional qualification of volunteers and second, all risk prevention experts (volunteers and public representatives) get to know each other. Informal exchanges are enabled.

Local avalanche commissions are the interface between locals and the authorities and therefore they are embedded in a larger network that is responsible for natural hazard management. Figure 2 shows formal contacts within the avalanche risk prevention network. The avalanche commission consults the local authority and shares information with or uses support by the alpine police, the avalanche warning service and local observers.

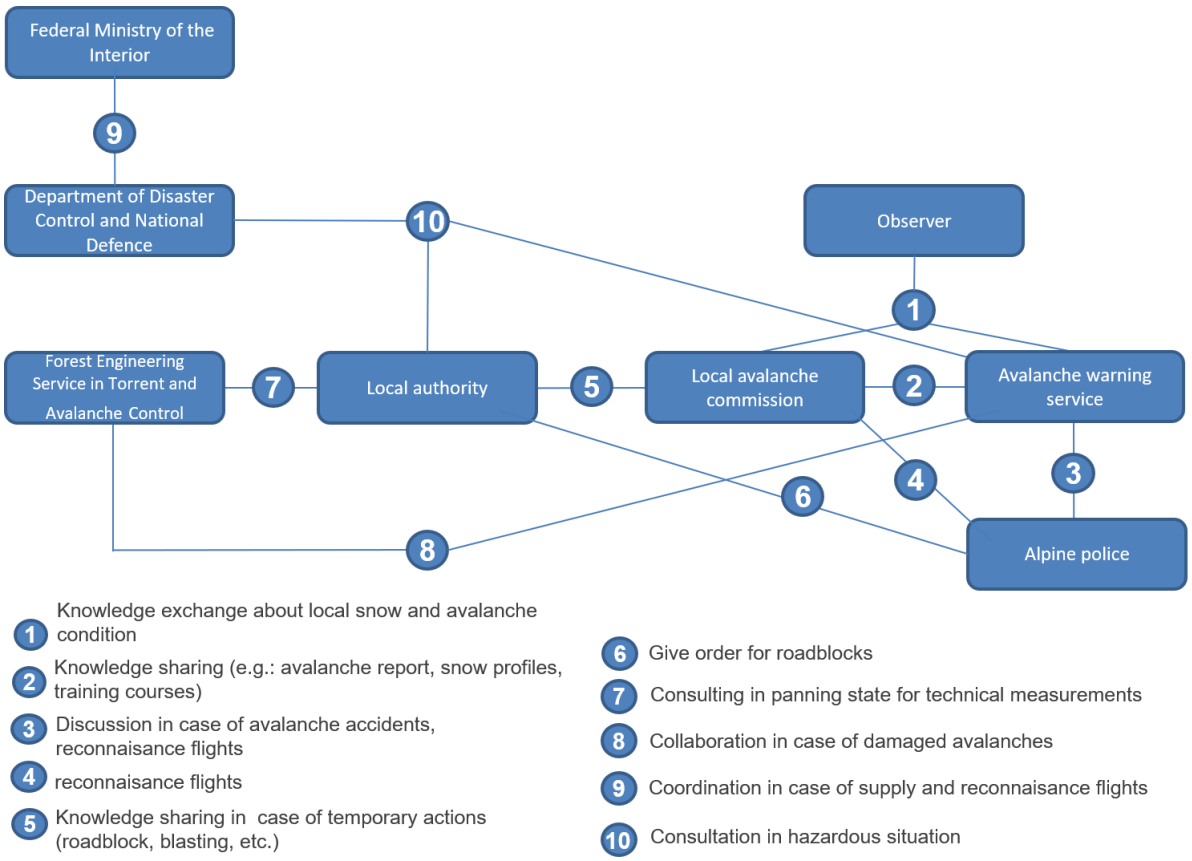

Figure 2: Formal contacts within the avalanche risk prevention network.

Organization and responsibilities of avalanche commissions

While in some federal states of Austria, rights and obligations of local avalanche commissions are regulated by law, there are only official recommendations in others. Despite a different regulatory intensity, the composition and appointment of the members, the areas of responsibility and the avalanche commissions' duties are to a great extend identical in content. The mayor of a region exposed to avalanches is primarily responsible for founding an avalanche commission in his/her municipality. Commission members need to have professional experience and must be available on-site during the winter season. In practice, members of Austrian avalanche commissions are locals who mostly professionally work in the mountains e.g. ski-lift operators, people from the snow ploughing service, mountain guides etc.

The area of responsibility is the organized ski area (cross country skiing trails, ski slopes), traffic routes and the settlement area of the respective municipality. Local avalanche commissions exercise an advisory role; hence they are responsible for continuous evaluation of avalanche risk. Commissions' advisement enlarges public authorities' knowledge about the local circumstances and supports them by making dispositions. It is commonly practiced to not only advice decision makers but also recommend concrete solutions, if this is necessary.

Diversity of decision process in avalanche commissions

Risk prevention practice of avalanche commissions depend on local conditions but also on network internal factors (Renner and Lieb, 2016). As already mentioned, the local authority become consulted by avalanche commissions. In a best case scenario (see figure 3), their consulting will be based on intensive internal and external discussion processes and the professional interpretation of systematically collected observation and measurement data. Nevertheless, the discussion and decision processes differ considerably and can also proceed rather authoritarian than democratically and unthinking than deliberated. The internal and external degree of cross-linking and knowledge sharing and the form of youth development can be diverse, too.

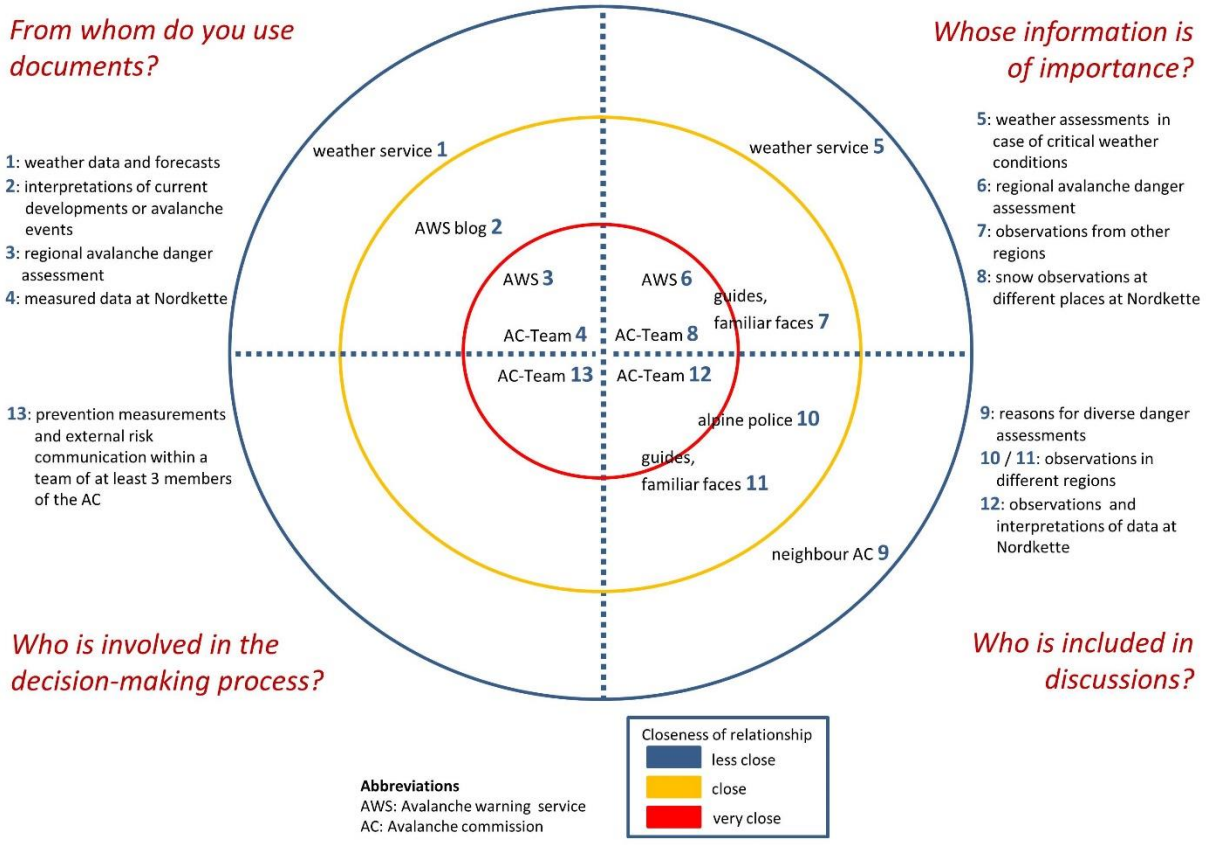

Figure 3: External and internal interconnection of an avalanche commission during the decision making process. Best case scenario. Renner and Lieb, 2016.

Quality assurance

Although tasks and regulations of the commission teams are similar, investigations have shown a considerable range of the decision making practice and the gap between an officially-presented picture and its practical reality. This finding points out the need to consider how to assure quality in the future. Closely linked with the quality assurance is the importance of communication skills and trusting relationships, which have been proven to be significant but understudied components in risk assessment.

Well-functioning and trusting internal and external relationships improve both data quality and quantity of data used for decision-making. Constructive team work allows critical reflection of personal opinions and perceptions, thus improving both final decisions and the quality of risk prevention. This aspect aligns with previous work on social capital in which it is understood to be embedded in social networks (Lin, 2001) and increases access to social support and information. It also corresponds to the so called "social and organizational capacities" (Höppner et al. 2012: 1757) or "network capacities" (Kuhlicke et al. 2011: 806) which emphasizes the importance of skills for communication, cooperation and building up trustful relationships.

Also based on our research (Renner and Lieb, 2016; Renner and Studeregger, 2018), there is an ongoing development process, in which training courses and also the education concept for avalanche commissions become revised. A special focus will lie on social capacity building, especially in terms of social and mental capacity. Moreover, also the legal situation is changing, e.g. in Styria will a concrete law replace the official recommendations for avalanche commissions. An ongoing discussion and investigation process is followed in Austria in order to improve the volunteers' capacity and, thus, the quality of avalanche risk prevention.

Literature

Höppner C., Whittle R., Bründl M., Buchecker M. (2012) Linking social capacities and risk communication in Europe: a gap between theory and practice? *Nat. Hazards*, 64, 1753–1778.

Kuhlicke C., Steinführer A., Begg C., Bianchizza C., Bründl M., Buchhecker M., De Marchi D., Di Masso Tarditti M., Höppner C., Komac B., Lemkow L., Luther J, McCarthy S., Pellizzoni L., Renn O., Scolobig A., Supramaniam M., Tapsell S., Wachinger G., Walker G., Whittle R., Zorn M., Faulkner H. (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.

Lin N. (2001): Building a network theory of social capital, in: Lin N., K.S. Cook, R.S. Burt (Hrsg.) Social capital: Theory and Research, New Brunswick, NJ, Transaction Press, 3–30.

Renner, R. and Lieb, G. (2016). Local Conditions and the Quality of Expert Networks: A Case Study of Avalanche Risk Prevention Practices. Interpraevent 2016. Conference Proceedings.

Renner, R. and Studeregger, A. (2018) Österreichische Lawinenkommissionen als Beispiel für lokale Netzwerke im gesellschaftlichen Umgang mit Naturgefahren. In: Rudolf Miklau und Kanonier (Hg.): Regionale Risiko Governance: Recht, Politik und Praxis. Wien. Österreich. 2018. 327–338.