Requirements for the use of impact-based forecasts by road safety organisations in Germany

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Road transportation is considered the most vulnerable mode of transport in terms of weather impacts (Molarius et al., 2014). Extreme weather events like winter storms, heavy rain or glazed frost can have a significant impact on road quality and hence, public safety. In addition, seasonal and daily changes in traffic volume or commuter flows influence the occurrence of accidents. German road safety organisations like maintenance services receive weather information through a road condition and weather information system (SWIS) that provides information like precipitation and road surface temperature. Hence, these information give an overview over the weather conditions on the roads - not what the impacts of those conditions can have on traffic. With predictive modelling, it is possible to assess the impacts of weather on road safety as hourly probabilities of weather-related road accidents (Becker et al. 2020). It is assumed that such information on impacts of weather events on road infrastructure can be of value for road maintenance services that are responsible for ensuring road safety. However, it is still unclear how such statistical information on accident probability would be used in practice. Early warning systems are encouraged to be 'people-centred' (UNISDR 2015), allowing users to act in sufficient time and in an appropriate manner. In order to become people-centred, those implementing a warning system must know who their audience is and understand their information requirements for an optimal response (Zhang et al. 2019). This conference contribution will shed some light on the requirements that practitioners of road safety organisations in Germany have for impact-based forecast on weather-related road accidents. The study is part of an interdisciplinary research project in collaboration with Germany’s National Meteorological Service DWD and follows a qualitative social science research approach. With the aim of stakeholder engagement in the process of developing predictive weather-related accident models, focus group discussions with managers of highway and road maintenance services as well as representatives of road and transport authorities were carried out and first results will be presented. Findings contribute to the understanding of professional recipients’ responses to weather warnings and weather information for their daily work tasks and hence, provide a deeper insight into weather service requirements from a set of stakeholders that are instrumental to public safety. Road safety organisations use weather information for the preparation of events, e.g. in planning of personnel and adjusting equipment at hand. In the focus groups, interest in further information for decision-making was expressed, while individual experience of the road’s conditions in practice was also highlighted.