



risk factor Inn (INNrisk) - transdisciplinary analysis of the 2005 flood in the province of Tyrol, Austria

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The transdisciplinary project INNrisk, in collaboration with public risk and disaster management, investigates the severe floods of 22nd and 23rd of August, 2005, and their effects within the federal province of Tyrol. The inundation and accompanying processes (e.g. debris flows, log jams, underwashing of infrastructure) caused by the river Inn and its tributaries created a dangerous situation for Tyrol. The overall economic loss of direct assets is said to amount to ca. 500 million Euros. Climate change has basically been causing a statistical increase of damaging floods within the Alpine Space in recent decades while increasing vulnerability at the same time. The expansion of settlements is one factor in the threat to large numbers of people and growing economic losses. However, the disasters of the last decade provide an opportunity for analysing the flood process in terms of natural-science and geographical aspects as well as in terms of economic and statistical ones. This should lead to a better understanding of triggers and effects in those areas where humans are active and form the basis for mitigation and adaptation strategies. The results of such analyses represent valuable information for public risk and disaster management, particularly in presenting the effects on public and private households.

The INNrisk project primarily aims to assess the framework conditions in systemic-legal terms and to analyse human actions during the floods in relation to various plans and the damage potentials resulting from them. The assessed losses depend to a great extent on the actions taken during the emergency and on flood operations by the public emergency management and local fire departments, which are in charge of floods and related processes in the case of Austria. Assessment will be carried out by analysing a database of series of human actions for the duration of the emergency and increased risk. The project also strives to arrive at a macro- and mesoeconomic assessment of the damages by category (infrastructure, buildings, vehicles, etc.) and sector, as well as gauging potential positive effects on the regional economy. It can be assumed that the main beneficiaries of natural hazard processes in Alpine regions are the building and construction industry, transportation businesses and their suppliers. For this part of the project, a georeferenced database will be designed to get an idea of spatial distribution, loss patterns and local specifics compared with natural scientific parameters of the 2005 flood.

An overall analysis serves to identify potential improvements within public disaster management and to sketch damage limitation strategies. The project results are of great value, not just for damage prevention measures against future Inn floods, which are likely to occur more frequently and in greater intensity as a result of global warming, but also for other rivers in the Alps. The results of this research may form the basis for developing effective adaptation strategies to climate change and the resulting potential threats to river valleys.