

## RISKPLAN 2.2 – RISK ASSESSMENT FOR DECISION MAKERS

### AN IT-TOOL SUPPORTS AND PROMOTES THE RISK DIALOGUE

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#### MOTIVATION

Decision makers dealing with natural hazards are strongly interested in getting an overview on the relevant hazard processes, the expected total annual risks and the cost-effective measures to reduce the risks significantly. In an interactive process – i.e. workshops performed by relevant stake holders and decision makers – answers and results for these crucial issues are developed. The process is substantially supported by the IT-tool RiskPlan. Therefore, RiskPlan is a useful alternative to the detailed risk assessment which is in general costly and time-consuming.

#### IT-TOOL RISKPLAN

RiskPlan is an IT-tool, ready to analyse the risk situation of natural hazard, technical and social hazards in a certain area. Furthermore, the tool enables the assessment of measures regarding their cost-effectiveness and is not depending on a high data quality.

Actual State	Risks per hazard process		Risks per region/object area
Regions/object areas	Hazard Process 1	Hazard Process 2	Risk per region/object area
Region 1	<b>Annual risk region</b> Persons: 0 CHF Material assets: 0 CHF Total: 0 CHF	<b>Annual risk region</b> Persons: 0 CHF Material assets: 0 CHF Total: 0 CHF	<b>Annual risk region</b> Persons: 0 CHF Material assets: 0 CHF Total: 0 CHF
Object Area A	Total: 0 CHF	Total: 0 CHF	Total: 0 CHF
Region 2	<b>Annual risk region</b> Persons: 0 CHF Material assets: 0 CHF Total: 0 CHF	<b>Annual risk region</b> Persons: 0 CHF Material assets: 0 CHF Total: 0 CHF	<b>Annual risk region</b> Persons: 0 CHF Material assets: 0 CHF Total: 0 CHF
Object Area B	Total: 0 CHF	Total: 0 CHF	Total: 0 CHF
Risk per hazard process	<b>Annual risk hazard process</b> Persons: 0 CHF Material assets: 0 CHF Total: 0 CHF	<b>Annual risk hazard process</b> Persons: 0 CHF Material assets: 0 CHF Total: 0 CHF	<b>Total annual risk</b> Persons: 0 CHF Material assets: 0 CHF Total: 0 CHF



Fig. 1 Risk Assessment Cockpit in RiskPlan

Fig. 2 Case Study Nidwalden: Flood event 2005

RiskPlan uses the knowledge and experience of natural hazard experts and local representatives in case of lacking data. For this reason, RiskPlan promotes the risk dialogue among decision makers. During the participative process scenarios, their frequency and expected damages are estimated based on local knowledge and available data. Scenarios are defined by occurrence frequencies and their extent of damage. Damage indicators (such as fatalities, material damages) are monetised and aggregated to a total damage, expressed in Euro or US\$.

In addition, RiskPlan provides the cost of various measures and allows a comparison with the expected damage costs. Combining these elements, an optimal planning of measures based on cost-effectiveness analysis is possible.

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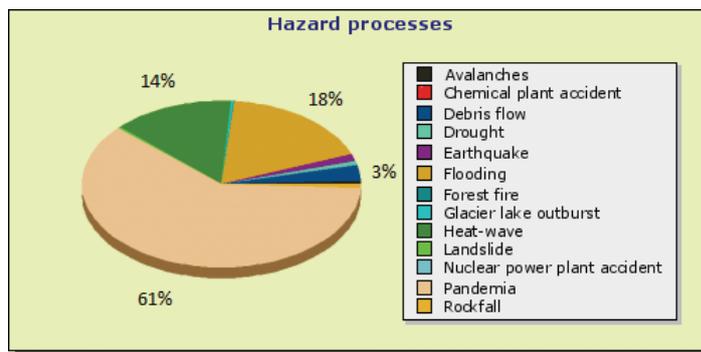
## CASE STUDIES

### Canton Nidwalden, Switzerland

Representatives of the partner countries within the Interreg III B project “AdaptAlp” (Germany, Austria, France, Italy, Slovenia) have been acquainted with the concept of the pragmatic risk management (and the IT-tool RiskPlan) working on the case study „Nidwalden“. In the region of the canton Nidwalden in Switzerland the natural hazard processes flooding of rivers and mountain torrents, lake flooding and landslides have been analysed. Measures to reduce the risks have been identified and reported. The case study has been performed in workshops using local experience and knowledge. Local experts and decision makers discussed the effects of the hazard processes using available intensity maps. Additionally, process protection measures have been defined for the river flooding and compared to the expected damages.

The case study and the results have been presented the representatives of the partner countries.

### South Tyrol, Italy



**Fig. 3** Case Study South Tyrol: Annual distribution of the overall risk considering hazard processes (in progress)

conducted with RiskPlan. RiskPlan enabled immediate reporting of the discussion results and therefore promoted the risk dialogue among the experts. Regarding the hazard process “Flooding”, which contributes 18% to the total annual risk, the workshop showed that the risk is mainly determined by material damage (approx. 80%). The hazard process “Heat-wave” which covers a 14% part of the total annual risk, is mainly driven by fatalities (about 34%) and people requiring long-term care (about 58%). The material damage is expected here with less than 10% of the total damage.

The project „Hazard and Risk Analysis South Tyrol“targeted on an overall assessment of relevant natural, technical and social hazard processes covering South Tyrol (Provincia Autonoma di Bolzano – Alto Adige), Italy. The project is still in progress. For each hazard process a detailed reference scenario has been elaborated and the corresponding risks have been assessed. 13 hazard processes (thereof 10 natural hazard processes) have been considered. On the occasion of two workshops, local experts discussed the effects of the hazard processes and estimated the occurrence probabilities. The risk assessment has been

## CONCLUSIONS

Regarding the described case studies, the following conclusions are highlighted:

- Quick estimate of the risk situation in a region
- Consideration of inputs from expert and local experience
- Suitable for a risk dialogue involving all relevant stakeholders
- Flexible tool with respect to hazards, scenarios, risk parameters etc.
- Application not limited to natural hazards
- Primary field of application on strategic level, operational decisions require a detailed risk assessment
- Results from applications (e.g. regions) elaborated by different stakeholder groups are not comparable

## REFERENCES

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