



Identify key dimensions; Develop indicators & models; Provide a conceptual framework; Build networks

emBRACE Field Study: Grisons (CH) and South Tyrol (IT). Institutions: WSL (CH), EURAC (IT)

Case Study Aim

Grisons:
Develop quantitative Resilience Indicators

South Tyrol: Mapping and analysing social networks and information flows to better understand their influence on resilience

Geographical Context

Hazard Context

Grisons and South Tyrol:

- Water-related hazards such as floods and debris flows
- Gravitational hazards such as rock falls, landslides and slope failures
- Avalanches and strong snowfall

Methods and Stakeholder Engagement

Grisons:

- Expert Interviews with Stakeholders
- Data Analysis regarding Indicators
- Quantitative Indicator Development

South Tyrol:

- Expert Interviews
- Population Survey
- Stakeholder Workshop
- Qualitative mapping of social networks and information flows
- Social network analysis

Preliminary findings: Indicators, Resilience

Grisons:

Resilience = $\min\{1 - (9.000 / km); 1\}$
 Lower Alps: $\min\{1 - (18.000 / km); 1\}$
 Swiss plateau: $\min\{1 - (36.000 / km); 1\}$

South Tyrol:

Resilience = $\min\{\log_{40}(a)+1; 1\}$

Resilience = $\frac{\text{Casualties}}{(\text{Time} + \text{Distance}) / 2}$

Factor Time = $\max\{1 - (\text{Years}/10); 0\}$

Factor Casualties = $\min\{(\text{Deaths}/10); 1\}$

Factor Distance = $\max\{1 - (km/50); 0\}$

South Tyrol:

Questionnaire about risk perception and behaviour in Badia/Abtei to better understand resilience

Map of information flows between natural hazard management actors