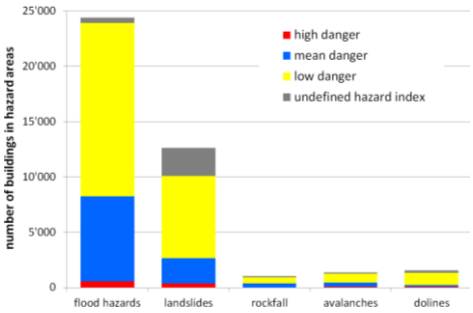
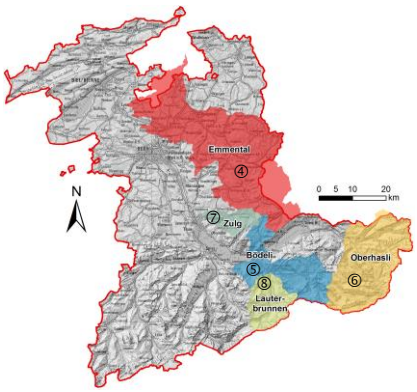
Testing in the Heart of Switzerland

Pilot Area Canton of Bern

Natural hazards in the Canton of Bern

- 190'000 people (20%) living in hazard areas
- 690 km (26%) of major roads are crossing hazard areas
- 2'200 avalanche tracks are known
- 10'500 km of rivers and torrents flow through the Canton





Features of the pilot area & subareas

① Natural hazard division
whole canton with focal point on Bernese Oberland

② Cantonal water regulation authority
whole canton with focal point on lakes and large rivers

③ Forest office, forest fire management
whole canton, extendable to Jura, Solothurn, Fribourg, Vaud

④ District emergency organization Emmental
hilly landscape, 500 to 2000 m.a.s.l., small catchments

⑤ Regional emergency organization Bödeli (Jungfrau region)
border prealps to mountains, focus on large rivers and lakes

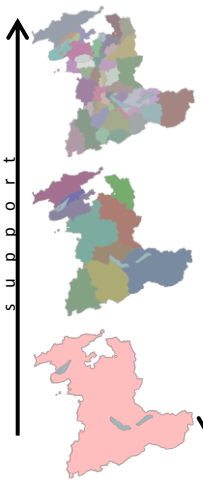
⑥ Hydropower Company Oberhasli, security service
regional, high mountains, 1000 to 4300 m.a.s.l.

⑦ Fire service Steffisburg
local, prealps, catchment area of Zulg, 500 to 2000 m.a.s.l.

⑧ Communal emergency organisation Lauterbrunnen
local, high mountains, 900 to 4200 m.a.s.l.

Emergency organization

- Bases on the principle of subsidiarity and is a militia system
- Problems are first solved locally for as long as local resources are sufficient
- As soon as means and possibilities of local organizations are insufficient, the next level is mobilized



1st level
52 local and regional emergency organizations

2nd level
10 district emergency organizations

3rd level
1 cantonal emergency organization

Emergency response challenges

The smaller the time horizon, the more relevant is good, localized information (not implemented in GIN), on-site observations and "instinct" of persons with ample experience.

small-scale catchments (< 10 km²)
- weather forecast and warnings as **information to variable disposition**, sensitisation of responsibles, standby mobilisation
- nowcast is without benefit for locals: data transfer is slower and less complete than on-site observation

◎ **focus on good prognosis for disposition warnings (12 to 24 h ahead)**

large-scale catchments (> 500 km²)
- weather forecast as **warning of triggering events**, wake-up call for intervention
- nowcast with high benefit to verify prognosticated development and deduce the probable course of an event

◎ **focus on good forecast for possible triggering events, considering the actual variable disposition for 1 to 3 days ahead and trends up to a week**

Weather & climate challenges

Flood
in larger rivers and high water in the 4 big lakes
district to cantonal
many hours to days

Flash floods
in specific mid- and small-scale catchments
local to regional
minutes up to few hours

Debris flows
in small mountain torrents
local
minutes

Landslides
swallow landslides and mobilisation of permanent mass movements
local to district
minutes to hours (days)

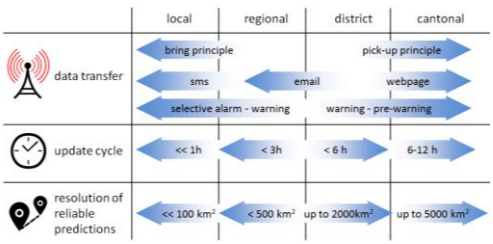
Avalanches
in the mountainous part of the Canton
regional to district
hours to days

Forest fires
whole canton, hotspots can differ from small-scale topography and forest type
regional to cantonal
days to weeks

Aims

Initial situation

- GIN is a quite well developed information platform for weather induced hazards in Switzerland
- Ideas from practitioners for improvements exist, but further development and expansion lacks



Assumptions

- The focus of ANYWHERE is on **disposition warning systems.**
- The installation of specific monitoring instruments is not part of ANYWHERE. **ANYWHERE bases on existing** weather **information** (out of models and measurements)

Goals

- The tool to develop is useable for experts as well as less skilled people
- Linkage between local weather fore- & nowcast and locally derived threshold values for process triggering

Abteilung Naturgefahren
Amt für Wald des Kantons Bern

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