ÖBB – Natural Hazard Management

Climate change adaption strategies of the Natural Hazard Management

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Challenges:

1) Design event of older safety structures
Challenges:

2) Guarantee the high availability of our network
Challenges:

3) Risk approach with constantly changing impact parameters
1) infra:wetter

The weather information system includes:

- On demand weather forecasts by special infrastructure weather models
- Reliable weather warning system
- Real time weather station data
- Communication channels
  - Reporting systems (local reports)
  - Information about measures (e.g. snow removal, service restrictions, ...)
- Open interface for additional data
  - Flooding information
  - Fire risk
  - Governmental data
  - Flash flood warnings
  - ...
Adaption and Experiences:

2) Early warning systems

Source: WLS Report 17, Institut für Alpine Naturgefahren und Forstliches Ingenieurwesen, BOKU Wien
Adaption and Experiences:

3) Avalanche Commissions

**Principles:**

- operational avalanche warning service
- trained avalanche specialists
- evaluation within commissions
- advice for the decision maker
- instruction-freedom
- expert opinion
- premium training
- equipment provided by the employer

- cooperation with the ministries, national disaster management, avalanche warning services, district administrations, municipalities
Adaption and Experiences:

4) Flood Risk Warning Service

- **Incoming weather warning**
  - Weather/flood warning at least > 72h prior to event
  - Pre-assessment of situation
  - Consult hydrographic services of the states
  - Warn and alert system classification
  - Approximate identification of affected railway sectors and internal conference with general mgmt
  - Regional flood warning

- **Incoming flood forecast**
  - Hydrological flood forecast
  - Identification update of affected railway sectors according to flood forecast

- **Continuous water level updates**
  - Flood alarm
  - Install incident command, decide about railway closure / temporary mitigation measures
  - End Alarm
Knowledge needs:

1) Accurate weather forecasts with a higher resolution

Source: UBIMET, Risk models & alarm systems for infrastructure, presentation 2015

2) More certainty on how the local climate will change

Source: ENHANCE Deliverable 7.3: Risk assessment results – Case study: Building railway transport resilience to alpine hazards
Thanks for your attention!