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Federal Department of the Environment,
Transport, Energy and Communications DETEC

Federal Office for the Environment FOEN

Switzerland's approach and implementation in the integral risk management



SBI Workshop
10-12 October 2011, Lima, Peru

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- Overview – situation in Switzerland
- Integral risk management cycle
- Assessing hazards and risks
- Protection measures
- Land use planning
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Natural hazards in Switzerland

Jura

→ Main problems:
rockfalls, landslides
→ Damages to
infrastructures



Central plateau
→ Processes:
floods, storms,
→ Damages to
urban areas and
industries



Mountain regions
→ Main problems:
avalanches, rockfalls,
debris flows, landslides
→ Live losses and damages
to infrastructures



Implementation

Integrated risk management

- **Comprehensive risk assessments:**

All hazards

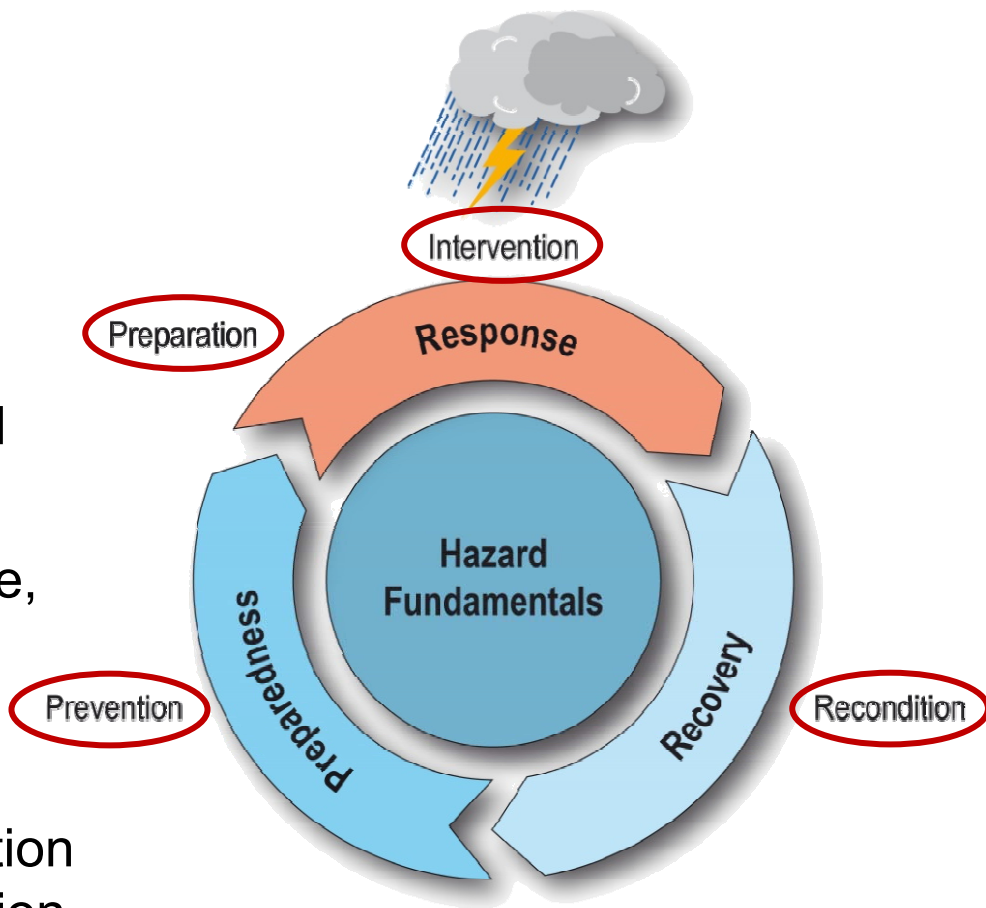
- **Sustainable approach:**
Cost-effective, ecologically sound and society approved

- **Vulnerability reduction:**

Increase of resilience for people, assets, infrastructures and services

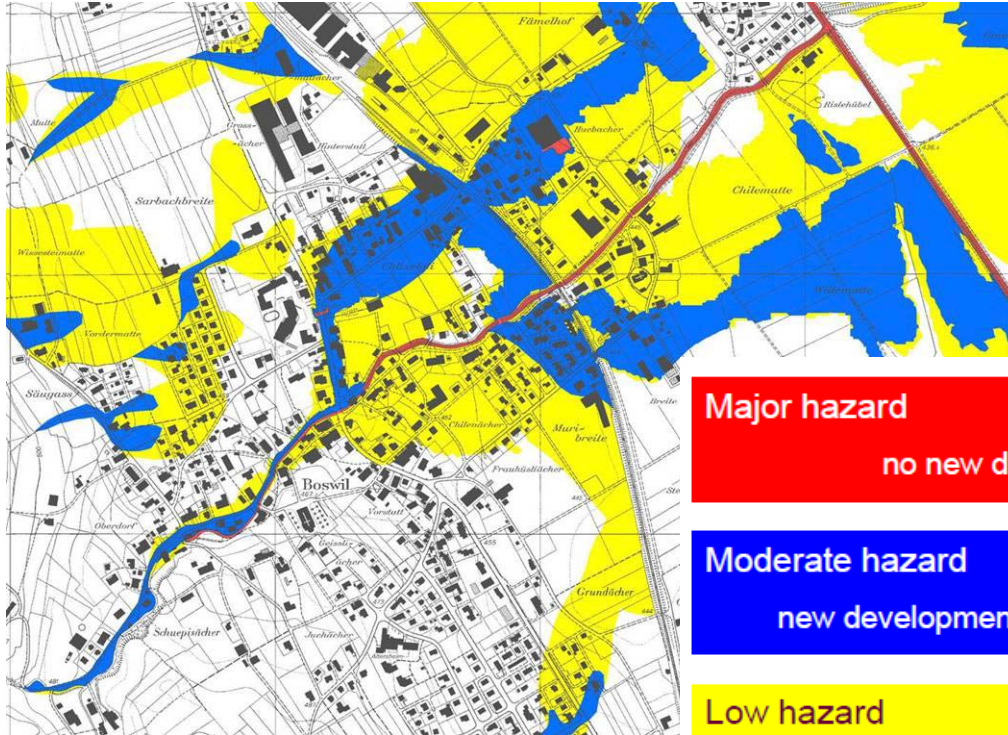
- ➔ **Consider climate change:**

Harmonization of risk reduction and climate change adaptation





Hazard assessment



- Detailed hazard assessment
- Scale 1:5,000 - 1:2,000
- 4 hazard categories
- Land use planning

Major hazard

ban zone

no new development zones / no new building

Moderate hazard

conditional zone

new development zones / new building only with restrictions

Low hazard

index zone

information and recommendations for landowners

Residual hazard

index zone

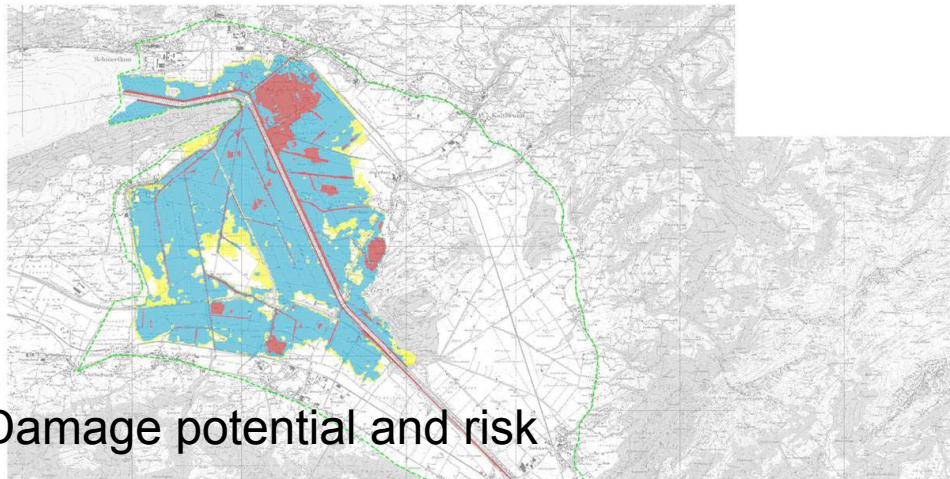
emergency planning measures

Consequences for building and zoning regulations

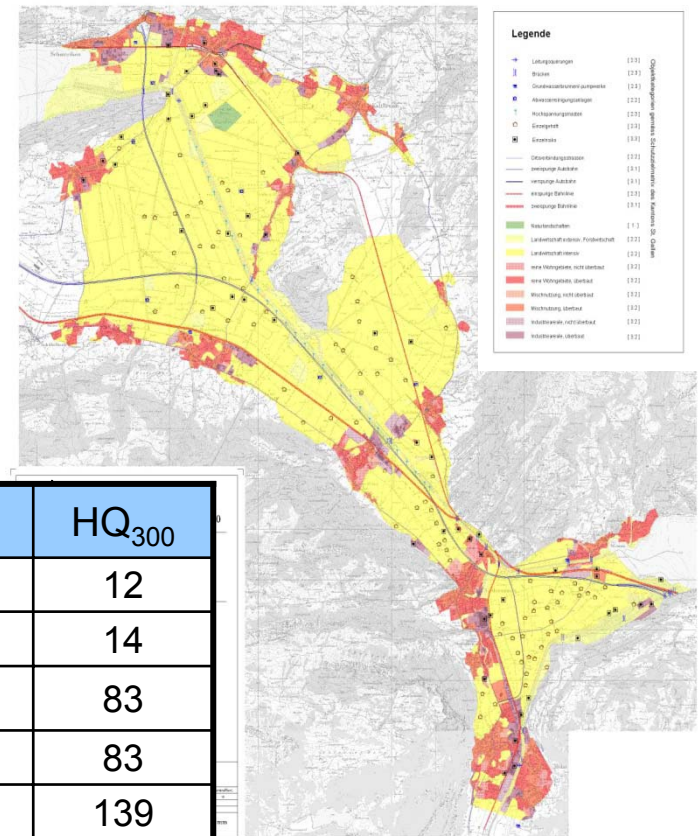


Risk assessment

Hazard map (and intensity maps if available)



Uses



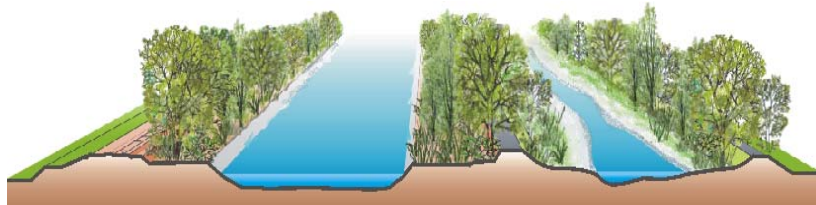
Damage potential and risk

Object category	HQ ₃₀	HQ ₁₀₀	HQ ₃₀₀
Agricultural land	8	11	12
Transport routes	1	9	14
Housing and development zones	19	60	83
Trade and industry	18	70	83
Special risks	19	129	139
Damage potential (CHF million)	65	279	331
Risk (CHF million p.a.)	1.5 – 3.0 million		

Linth 2000 project



Protection measures



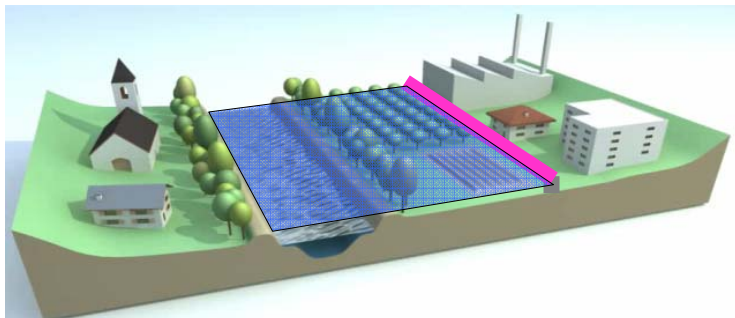
- **Improve discharge capacity**
Higher protection objectives
Hydrological changes due to CC



- **Reinforce dykes**
Higher protection objectives
Not adaptable to hydrological changes



- **Channel widening**
Higher protection objectives and river rehabilitation
Resilient to hydrological changes



- **Keep flood areas free**
Reduce future losses
Adapted to hydrological changes



Land use planning



- Leave space free of construction for extreme events
- Analyse events before reconstruction
- Implement hazard maps in municipal planning

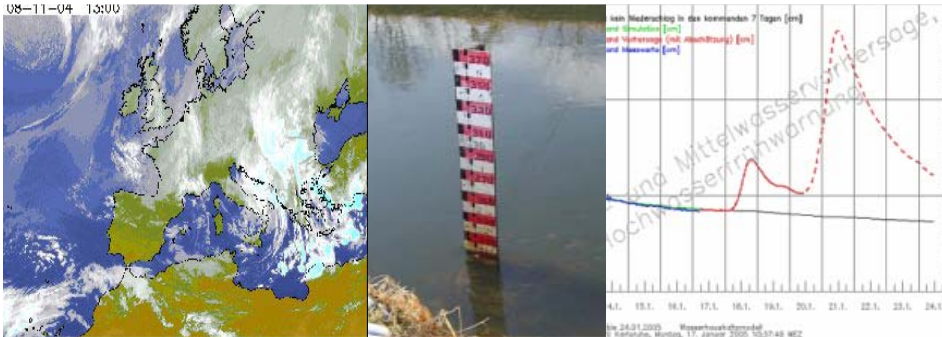
➔ **Prevention in land use planning is more effective and sustainable**



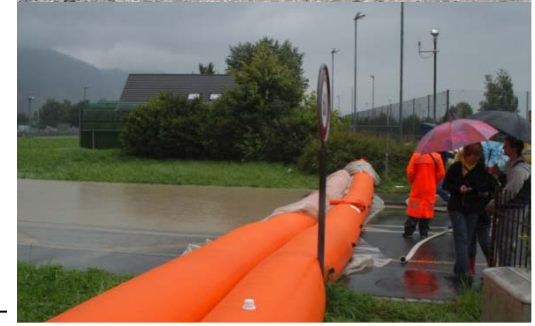


Reduce residual risk

Warnings and alerts



Damage mitigation



Evacuation





Role of insurance

- **Awareness raising**

Insurers and government coordinate to make risk data available.

- **Enabling conditions and regulation**

Through legislation, financial oversight and monitoring, government can provide incentives for insurance to promote risk-reducing activities.

- **Direct financing of risk reduction measures**

Insurers can invest (voluntarily) directly in risk reduction measures to avoid large compensation claims.

- **Risk reduction as a prerequisite for coverage**

Insurers can require that policy holders undertake specific disaster risk reduction measures (after 2 events).



Swiss CC adaptation strategy

Strengthening of DRR measures

- Implement DRR strategy as an integral component of sustainable development. Evaluate implementation.
- Monitor natural hazards and events, and their long term evolution.
- Strengthen international (bilateral and multilateral) cooperation.





**Thank you very much for
your attention**