



IRASMOS

Integral Risk Management of Extremely Rapid Mass Movements
2005 – 2008

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The IRASMOS partners

Integral Risk Management of
Extremely Rapid Mass Movements

Duration: 1 Sept 2005 – 30 June 2008

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graph TD
    SLF[SLF/WSL Switzerland  
Coordinator] --- UP[University of Pavia, Italy]
    SLF --- CEMAGREF[CEMAGREF, France]
    CEMAGREF --- BOKU[BOKU University of Vienna, Austria]
    CEMAGREF --- PM[Politecnico de Milano, Italy]
    UP --- CNRM[CNRM Météo-France]
    UP --- UT[University of Trento, Italy]
    CNRM --- NGI[Norwegian Geotechnical Institute]
    UT --- NGI
    BOKU --- NGI
    PM --- NGI
    
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Objectives of IRASMOS



Integral Risk Management of Extremely Rapid Mass Movements

- Snow avalanches
- Debris flow
- Rock avalanches

- Widespread efforts for natural hazard management
- Risk based solutions are still **unsystematic and diverse**...
 - ...between different countries
 - ...between different hazard processes
- Project IRASMOS attempts to...
 - ...**evaluate, review and compare** methods and procedures
 - ...bring **scientists and practitioners** into contact
 - ...compile and develop **best practices**
 - ...take first steps towards an **international harmonization** in risk management
 - ...identify **open questions** and research priorities

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Three very different hazard processes...



Snow avalanches

Debris Flow

Rock avalanches

Very different state of

- experience / data base / terminology
- physical process understanding
- predictability
- international harmonization

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Tool Kit for Integral Risk Management

Recovery

- Reconstruction
- Insurance
- Mitigation of indirect consequences

Prevention

- Land use planning
- Technical measures
- Biological measures

Intervention

- Forecast and Warning
- Evacuation
- Closure

Risk

$$R_{i,j} = p_j \cdot P_{i,j} \cdot A_i \cdot V_{i,j} \cdot \Phi_{i,j}$$

i : object
j : scenario

Probability of scenario Exposition Value Vulnerability Risk Aversion

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Hazard mapping & zoning

Basis: long term statistical averages are relevant
→ *Critical dependence on long term data bases!*

Basic concepts are similar between countries and hazard processes, but...

- ...details and quantitative thresholds have developed differently in different countries (*and show in some cases differences that can not be justified scientifically*)
- ...international harmonization may be arduous, due to **economical implications** (in contrast to forecast and warning)

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Risk management and climate change

Many risk mitigation measures (particularly technical measures) cover a life span of 50 – 100 years.

- This is the time scale of climate change!
- Thus climate change has implications for sustainable natural hazards risk management, but they are still poorly known quantitatively.
- → **Challenge:** Development of robust risk management strategies under uncertain climate change scenarios

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Where are the benefits – and for whom?

Symposia:

- **Round Table “Science-Practice”, Chamonix 25-26 January 2007**
Objective: Discussion of present state and Identification of important future questions
- **Final IRASMOS Symposium, Davos 15-16 May 2008**
Objective: Dissemination of IRASMOS Results

Handbook Risk Management...:

- ...has to be written for the whole consortium
- ...often not directly applicable to in an individual country
- ...but useful basis for national organizations

Sustainable transfer to practice...:

- ...SLF can profit from IRASMOS in its long term work in Swiss risk management
- ...SLF could bring the Swiss procedures and viewpoints into the European consortium. Useful in view of the development of EU standards.

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A photograph of a snowy mountain landscape. In the foreground, there are large, rounded snowdrifts. In the background, there are dark, jagged mountain peaks under a bright sky. A bright sun is visible in the upper left corner, creating a lens flare effect. Snow is falling from the sky, creating a white mist. The text "Vielen Dank für Ihre Aufmerksamkeit!" is overlaid in yellow in the upper right corner.

Vielen Dank
für Ihre Aufmerksamkeit!

More information on
<http://iramos.slf.ch>