DEALING WITH DISASTER RISKS

The Risk Governance Approach

POLICY-BRIEF

EU Strategy for the Alpine Region - Action Group 8

Federal Ministry
Republic of Austria
Sustainability and Tourism

Technische Universität Wien
Institute of Spatial Planning
Land Policy and Land Management
raum boden

IMPRINT:

www.alpine-region.eu/action-group-8

Publisher:	EUSALP Action Group 8
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Fotos/Logos:	AlpGov, BMNT, EU, EUSALP, TU Wien
Date:	09/2019

Once upon a time ...

The mayor of Alpville had a challenging week. A severe thunderstorm brought rainfall and caused some flooding. But the municipality was lucky and no severe damages occurred.

This due to a several years lasting comprehensive process to prepare for natural hazard events and mitigate them. In cooperation with federal offices the municipality managed to elaborate a hazard map, to construct check dams and retention basins to store flood water. This took time and was only possible because land owners and concerned people were involved. In discussions different scenarios and solutions were considered and finally a decision was taken that had the support of the local population.

But technical prevention measures are only one side of the coin. The warning and alerting system was optimised and information on expected heavy rainfall, storms, etc. is now communicated via smartphone. So people have time to prepare and take precautions for their own property. This also raises awareness of people for impending risks in their environment.

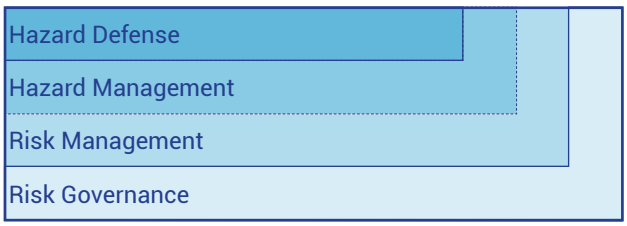
Finally, procedures and responsibilities within the local voluntary organisations such as the fire brigade were reviewed and optimised to make sure everything works smoothly in case of any events.

Alpville is now prepared for hazard events, knows how to cope with them and how to react quickly and adequately to avoid damages. Developing solutions together, discussing options and scenarios and sharing the responsibilities did help to master the flood event and to do so in the future.

PRELIMINARY REMARKS

This policy brief is a **result of a study** commissioned on the **status quo of risk governance mechanisms** in dealing with certain natural hazards in the EUSALP Region. The EUSALP Action Group 8 took over the task of mapping risk governance throughout the different countries, regions and provinces. The **self-assessment** and **discussions within the group** were supported by external experts and conducted in close cooperation with the working group on natural hazards (PLANALP) of the Alpine Convention.

The core idea of the governance mapping is to take a look into the actual ways we altogether handle natural hazards that developed from a defense towards a risk governance approach.



Source: © Alpine Convention, 2019

Risk governance is context based.
People and places matter and no general solutions exist.

KEY MESSAGES FOR ENHANCING RISK GOVERNANCE

1 Risk governance is not an independent state owned instrument

The integration of **risk governance** mechanisms in the way society handles and manages natural hazards **demands innovation** and **adaptation** in the **existing management systems**.
A standardised and universal scheme is not applicable because risk cultures and institutional embedding differ.

Therefore, stablish a **dialogue among peers** accompanied by experts.[1]

2 Holistic perspectives matter

Risk governance aims to **foster** an **open process of deliberation and negotiation** as a learning process that transcends conservative modes of regulation.[2]

Link spatial planning, disaster control and other sectors engaged in the field of hazard risk management via platforms, frameworks, etc.

3 Regional risk perceptions and cultures matter

Integrated and strategical development of effective prevention measures are often only possible, if causal links and interdependencies are considered. Local and regional **risk perceptions and risk cultures differ** and are important criteria that need to be considered.[3]

4 It is important to be recipient to emerging initiatives

People no longer perceive public authorities and institutions as invulnerable representatives of the state but instead want to **participate in the discussion for solutions** such as developing measures for hazard prevention.

The public administration should aim to give people the possibility to participate, consider individual experiences, motivations and personal abilities to take action.[4]

5 Risk governance needs to be operational

Risk governance has to be carried out and not exclusively framed by a scientific discussion. It is more about **negotiating solutions** of stakeholders with a common risk, than constructing frameworks and procedures.

Therefore start initiatives and include concerned people.

1 Link and Stötter, 2015
2 Assmuth et al., 2010
3 Agnigard, 2011
4 Wachinger et al., 2013

RISK GOVERNANCE - TERMS, DEFINITIONS, CONCEPTS

What hazards were concerned?

Various natural hazards are relevant in the Alps, with a differing regional exposure. Not all of them can be mapped in a similar way and tackled by spatial planning or structural protection measures easily. The **study focused on the following hazards** because they have local to regional scopes and are addressed by the national regulatory frameworks in a similar manner:

Floods: Temporary overflow of a normally dry area due to overflow of a waterbody, runoff, flash floods, etc.

Avalanches: A large amount of snow, ice (and rock) gliding down the side of a mountain.

Torrential hazards: A combination of flood water and transported material (gravel, etc.) flowing in narrow and steep alpine rivers.

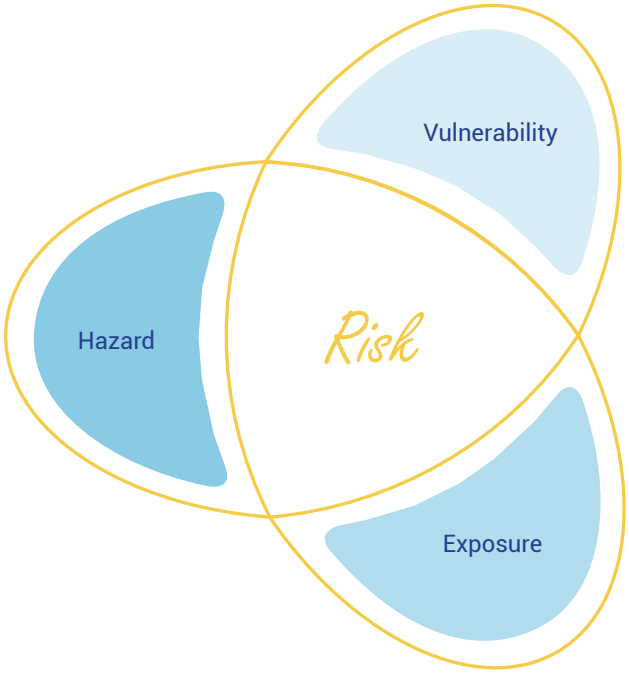
Rockfall: Refers to quantities of rock or stone falling freely from a cliff face. It is caused by undercutting, weathering, permafrost degradation or a missing protective forest.

Landslides: Movement of soil or rock controlled by gravity. Ranging from slow to rapid and superficial to deep but always carrying a mass that is a portion of the slope.

Relevant as well in the Alps: forest fires, glacial outbreaks, hail, lightning, meteorological hazards, storm

What is risk?

Risk is generally a **combination of the consequences of a hazard event** and the associated likelihood of its occurrence. Risk in context of natural hazards is a product of **vulnerability** (the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard), **exposure** (people, property, systems or other elements present in hazard zones that are thereby subject to potential losses) and the **hazard process**.[5]



Source: © UN-SPIDER, 2018

Legal regulations aim to establish a certain level of safety and reduce the overall risk by the combination of different prevention measures. Nevertheless, a certain **residual risk persists** - absolute safety does not exist.[6]

[5] EC, 2010
[6] Schneiderbauer et al., 2017

What is risk governance?

Governance is a complementary approach to government-based public administration schemes and legal frameworks, that tries to compensate certain limitations. The main idea is that **decisions should be taken** not so much in administrative dimensions but rather **on a local to regional level**.

The **participation of different stakeholders** should be **fostered**, and decision-making should rely on a negotiation process rather than on formal modes only.[7] There don't exist universal defintions of the concept. Hence, it is adapted in respect to the particular field of application.

Risk governance applies the governance concept on the ways we deal as a society with natural hazards. There, threats are experienced directly by people. Consequently, past events shape the common memory as well as the risk awareness and therefore affect local people and communities. One definition takes up this idea and states that **risk governance** "... can be described as the **various ways in which all interested subjects manage their common risk affairs** ...".[8] This definition is simplistic but states the essential two parameters for risk governance:

* a common problem of concerned stakeholders (local population, public authorities, NGOs, etc.) and
* the existence of a discussion and negotiation network that helps to deal with natural hazard risk.

Which international frameworks and platforms do exist?

* **Sendai Framework for Disaster Risk Reduction - SFDRR**
  The United Nations develop global frameworks and guidlines to foster sustainable development also by reducing natural risks. The present relevant framework here is the SFDRR 2015-2030.
  Link: www.unisdr.org/we/coordinate/sendai-framework

* **Intergovernmental Panel on Climate Change - IPCC**
  The IPCC looks at disaster risk management from a climate change perspective and publishes status quo reports.
  Link: www.ipcc.ch

* **EU Strategy for the Alpine Region - EUSALP**
  The EU has manifold initiatives to establish governance mechanisms and tackle disaster risk management on different levels. The Alps have due to the EUSALP Strategy a special focus.
  Link: https://www.alpine-region.eu/

* **Alpine Convention**
  The Alpine Convention is an international treaty between the alpine countries and the EU. It aims with a special working group on natural hazards to foster the international exchange on risk management.
  Link: http://www.alpconv.org/

* **INTERPRAEVENT**
  The INTERPRAEVENT is an international research association fostering interdisciplinary research concerning natural hazards.
  Link: http://www.interpraevent.at

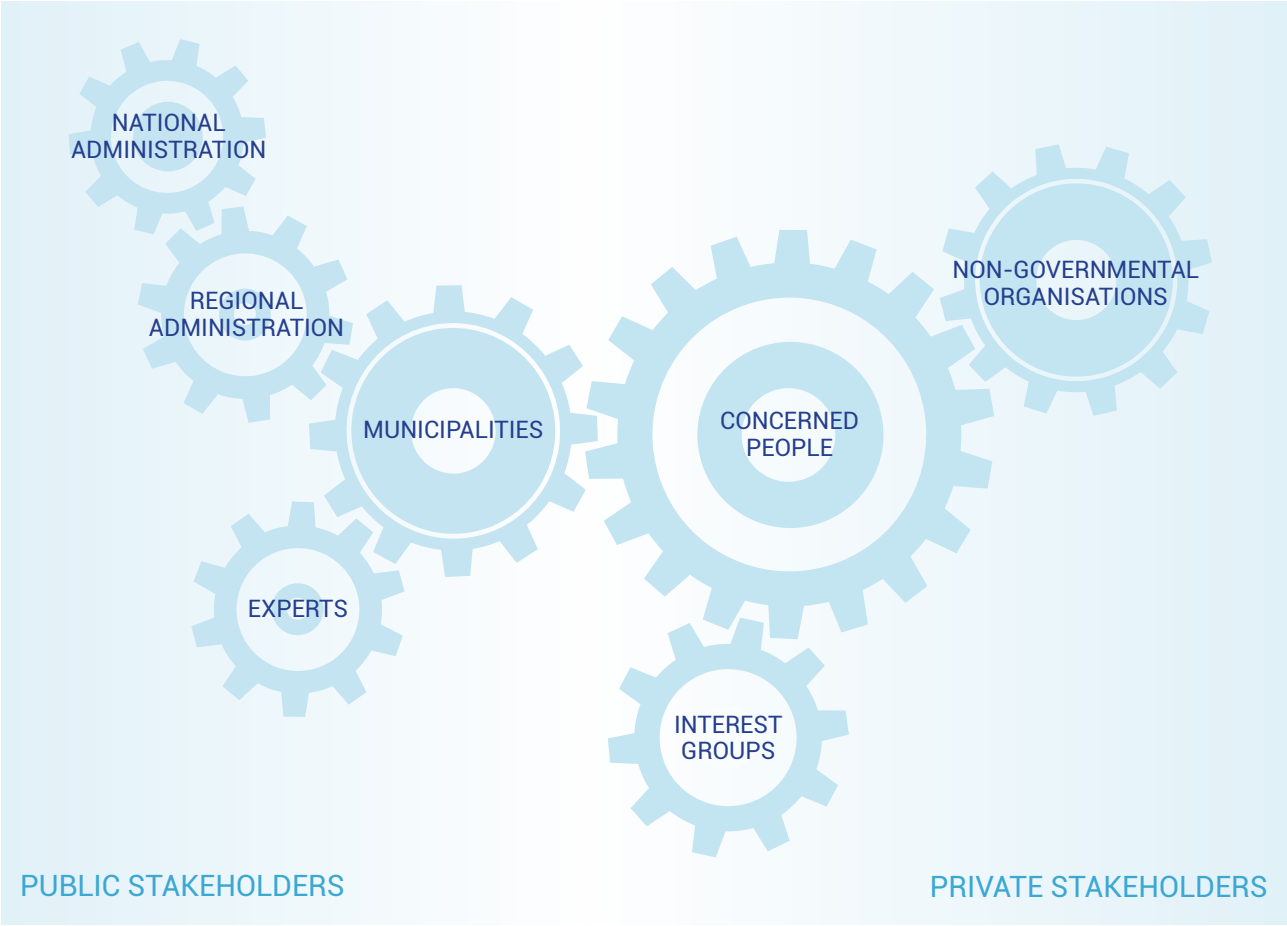
[7] Benz and Papadopoulus, 2006
[8] Marchi, 2015

STAKEHOLDERS – COMMUNICATION *)

No matter the scale and scope of governance processes for natural hazard prevention, stakeholders and communication play a key role.

The different **stakeholders** can be roughly divided in actors of public as well as private risk management. Public risk management has to fulfil its legal obligations to ensure a safe living environment and help to cope with natural hazard events. Nevertheless, resources and knowledge of experts are limited and **civil society** demands for **transparency and co-determination**. Governance processes that take the dynamic risk concept into account and include different stakeholders have to set a focus on transparent and respectful communication among stakeholders aiming to find **feasible solutions** and to **share responsibilities** for natural hazard prevention. A reduction of the risk for local communities, regions, etc. is the overall aim of such processes.

IMPORTANT STAKEHOLDERS IN GOVERNANCE PROCESSES



*) *Transparent communication among stakeholders is an essential aspect of risk governance. It is necessary to build trust and a common understanding to develop solutions together.*

Risk governance helps ...

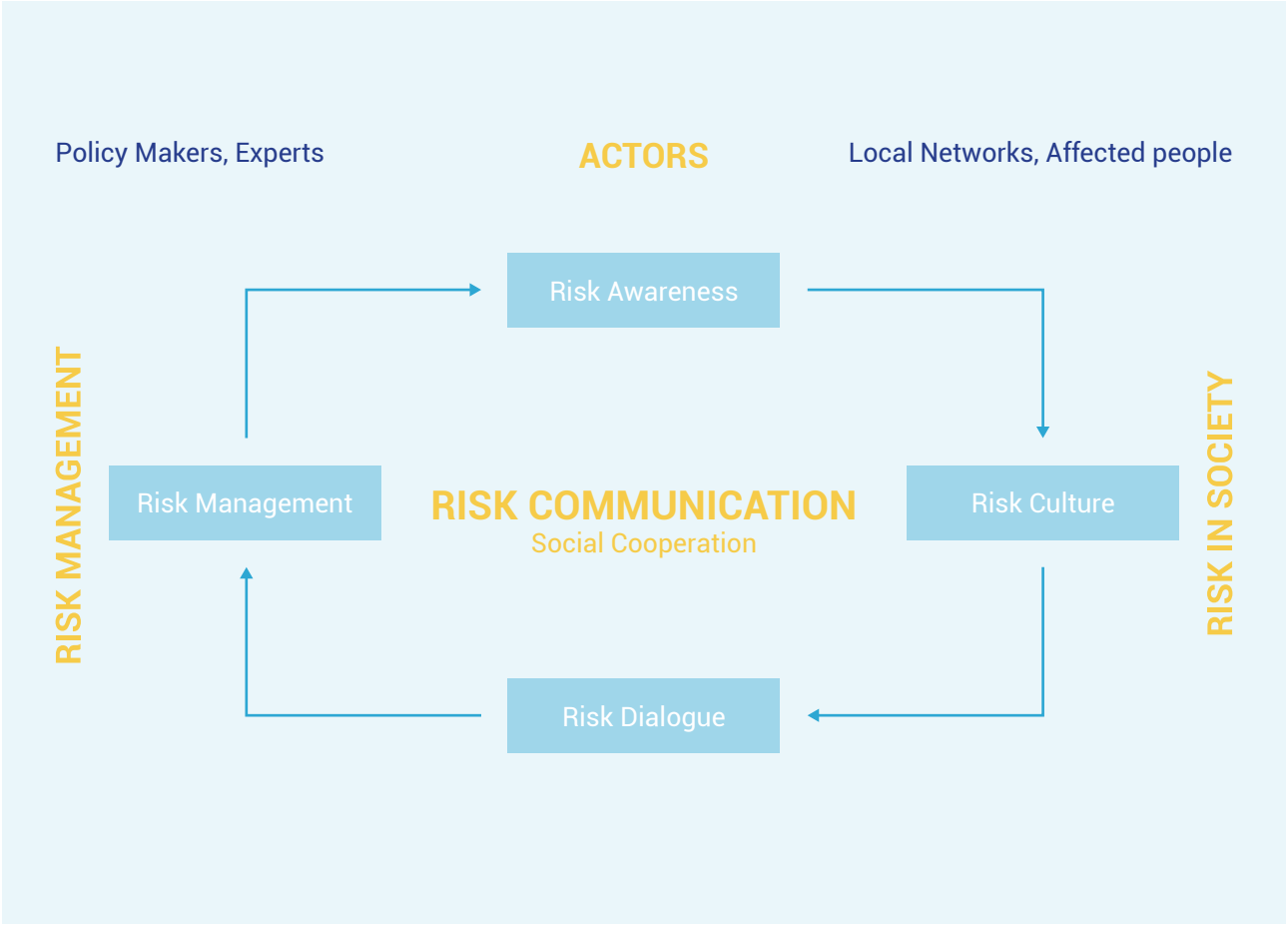
... to generate **knowledge** and raise **awareness** of people for natural hazards and risk (risk communication),

... to realise hazard risk and find a level of **acceptance** (risk culture) and

... to generate **public discussion** and negotiation processes on the level of safety and accepted risks.

Risk governance supports local and regional **adaptation processes** to natural hazards and fosters the capability of local people to **cope with risks**. **Central aspects** of risk governance are therefore **communication and cooperation** to finally raise resilience and reduce risk.

THE INTEGRATIVE APPROACH OF GOVERNANCE



Source: after IRGC, 2005

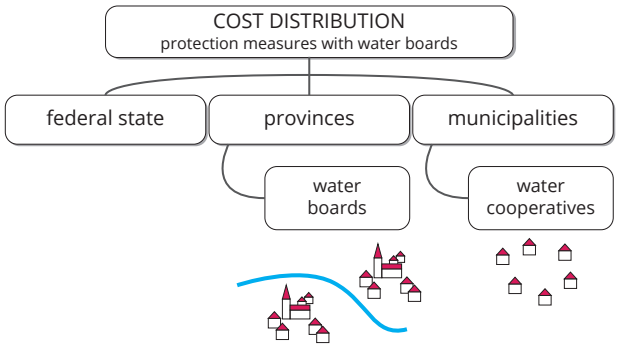
RISK GOVERNANCE IN PROGRESS ...

Water associations and cooperatives - Austria

The cooperation and financial distribution of cost for prevention measures among upstream and downstream municipalities is often difficult to ensure. The Austrian Water Act provides the mechanism of water associations (municipalities) and water cooperatives (citizens) based on the principle of solidarity.

Financing protection and prevention measures can hardly be paid by state and federal money only. Therefore, a cost distribution among public stakeholders including municipalities is in place in Austria. Municipalities can form associations to negotiate their contributions to projects. Cooperatives with citizens as members can also financially contribute using special allocation schemes. For example, the beneficiaries of a measure pay for the risk reduction they experience.

Cost distribution for financing prevention measures



Source: © BMNT, adapted by Schindelegger

Such organisations have democratically elected management boards and unique statutes that regulate operational and financial issues. Members take over the responsibility to contribute to the communities good.

www.naturgefahren.at

Flood audit - Germany

Municipalities do not always know, how well they are actually prepared concerning hazard events. Also due to changing environmental conditions, municipalities need to think of strategies beyond technical measures. The flood audit in Germany helps to self-assess the status quo situation in the country.

The municipal flood audit assesses the risk awareness of all persons in the audit. This includes local administrative stakeholders as well as members of the fire brigades. The audit evaluates the degree of risk awareness and not the risk itself. The public can only react properly if the relevant information and practical solutions to minimise risks are available.

Discussion during a flood audit

Source: © German Association for Water, Wastewater and Waste

The flood audit brings together relevant actors in the process of flood protection at a local level. It helps identifying gaps and prioritise planned measures and aims to foster local responsibilities.

https://de.dwa.de/de/hochwasseraudit.html

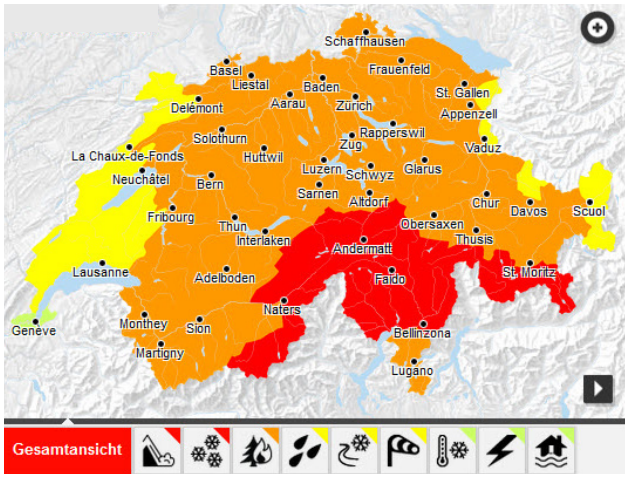
OWARNA - Switzerland

Warning and alerting play an essential role in case of hazard events. The OWARNA project (Optimising Warning and Alerting) aims therefore to optimise processes and interlink relevant information.

The flood events in 2005 caused costs over three billion Swiss Francs. Analysis showed that damage could be reduced by 20% by appropriate warning and intervention. Therefore, the OWARNA project was launched to reach several goals, one focusing on integrating stakeholders at different levels.

The forecast system was improved, cooperation at federal level intensified, communication and information products improved and local natural hazard advisors trained. During the events of 2013 and 2014 the new procedures were applied successfully and helped to prevent further severe damage.

Natural Hazard Portal - an online plattform



Source: www.natural-hazards.ch

https://www.bafu.admin.ch/bafu/de/home/themen/naturgefahren/dossiers/projekt-owarna-zeitige-warnungen.html

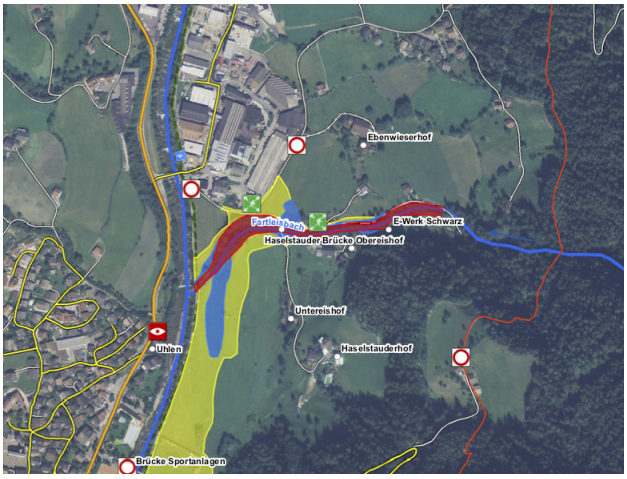
Intervention maps - Italy

Intervention planning plays a crucial role in risk management. Rescue and relief forces need to coordinate their actions in case of events. South Tyrol has therefore created the instrument of Intervention Maps.

Intervention Maps aim to reduce damage to people, goods, etc., to optimise personnel and resource allocation, ensure information transfer during an emergency phase, support rational decision-making and improve the safety of the deployment forces.

Such maps consist of a graphical as well as a textual component and are developed for specific locations. Rescue and relief forces carry the maps and use the simple evaluation form to decide quickly and rational what action needs to be undertaken. Drafting the maps is done in close cooperation with local forces and experts.

Extract of an Intervention Map



Source: Martin Eschgfäller (Author)
© Civil Protection Agency, Autonomous Province of Bolzano

http://afbs.provinz.bz.it/

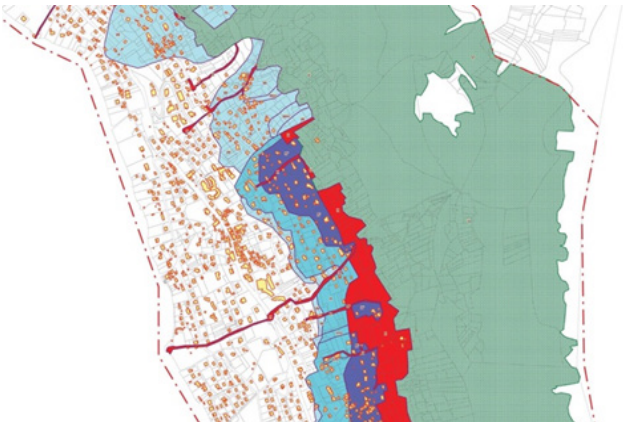
PPRN – France

Managing the development by using hazard and risk maps is well established in France. The Natural Hazard Risk Prevention Plan (PPRN) is an instrument to control urbanisation in risk zones and reduce vulnerability.

France introduced the PPRN in the 1990s to improve the control over the exposure and contribute to the reduction of potential damage by defining prevention, protection and conservation measures. A PPRN consists of a project outline (geographical area, current state), a regulatory zoning plan as well as specific regulations for every zone.

Setting up such plans demands an intensive coordination and cooperation of different administrative bodies as well as the concerned people to develop appropriate mitigation and management measures. These plans take deliberately the risk concept into account and include it in a comprehensive planning process.

Regulatory zoning, Veyrier-du-Lac



Source: © ONF-French National Forests Office – Restoration of Mountain Territories Department

https://www.ecologique-solidaire.gouv.fr/prevention-des-risques-naturels

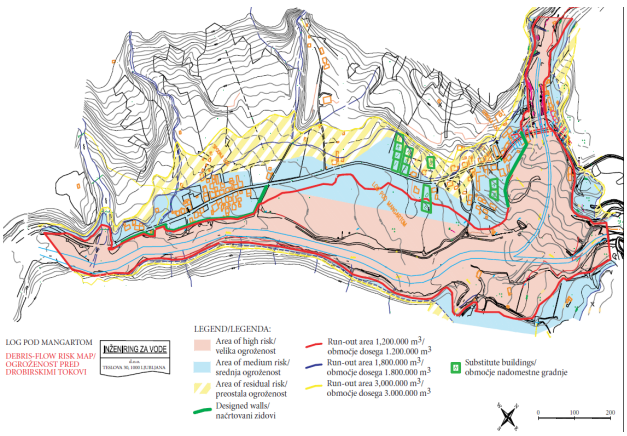
Stovže landslide, Predelica torrent debris flow – Slovenia

Slovenia experienced in the last decades various severe landslides and torrent flows. Dealing with the aftermath of the events in the municipality of Bovec was based on a governance process.

In November 2000 the village Log Pod Mangartom (Bovec municipality) got hit by a debris flow and a landslide claiming seven casualties and causing total damage amounted to € 36 million. The intervention of civil protection units was immediately followed by the reconstruction of the devastated area. To handle the future threat a special decree taking the remaining risk in spatial planning into account was issued by the government.

In the development of the future prevention strategies the involved stakeholders in the actual rescue and relief actions as well as the recovery phase were included.

Debris-flow risk map with location of new buildings



Source: © IZV, 2004

www.mop.gov.si/si/delovna_podrocja/zmanjsevanje_posledic_naravnih_nesrec/

RECOMMENDATIONS - WHERE TO TAKE ACTION

Risk governance understanding

Risk governance is a complex concept. With relation to natural hazards, risk governance ought to foster cooperation among institutional bodies and integrate the general public on different levels.

* According to the EUSALP objective „Cross-Cutting Policy Area: Governance, including Institutional Capacity“ **governance mapping** plays a crucial role. The presentation of mapping methods and good practice examples helps to receive practical results.
* The specific **understanding of risk governance** should be **clearly displayed** throughout the EUSALP Action Groups activities and other cooperations.

Decisions on protection measures

Especially planning and implementation of structural measures for hazard prevention are widely based on formal procedures. Opening these procedures for more discussion holds large potentials to foster risk governance.

* Involve local people on a local to regional level in the discussion of long term strategical concepts to establish holistic concepts for raising resilience and risk reduction. This needs **educating people** to be equal in discussion and find common solutions.
* **Awareness raising**, educational programmes and similar activities need long term perspectives and financing. Subsequently the institutional framework needs adaptions to shift the focus on such measures.

Mapping as a basis for communicating risks

The provision of sound hazard maps for planning prevention measures has been a major focus in the past decades. These maps are widely accessible online and help to raise the level of information on actual dangers and risks.

* **Hazard and risk maps** differ in their legal effect and are **difficult to read and interpret**. Therefore appropriate support is needed.

Spatial planning as essential aspect in a governance process

Natural hazards are widely considered in spatial planning, but the **risk concept** as a dynamic parameter is yet **hardly considered**. Planning regulations use primarily demarcated hazard zones as a basis for land-use planning to accomplish and guarantee a certain level of safety.

* Integrate planning institutions and planners widely in discussions of holistic prevention.
* Establish governance-based discussions already on a regional and strategical orientated level.

Organisational measures

Organisational measures for prevention and preparation in disaster control are strongly governance based and involve many different stakeholders on different levels and formalise responsibilities and actual operational tasks.

* **Involve local people** and assign them responsibilities. Public authorities ought to coordinate and supervise such action.

CROSSWORD

Do you remeber all the details?

1 What do policy makers/experts want to raise with people concerning hazard risks?

2 What is the abbreviation for the macroregional strategy in the Alps?

3 Give an example for a risk component! (Pl.)

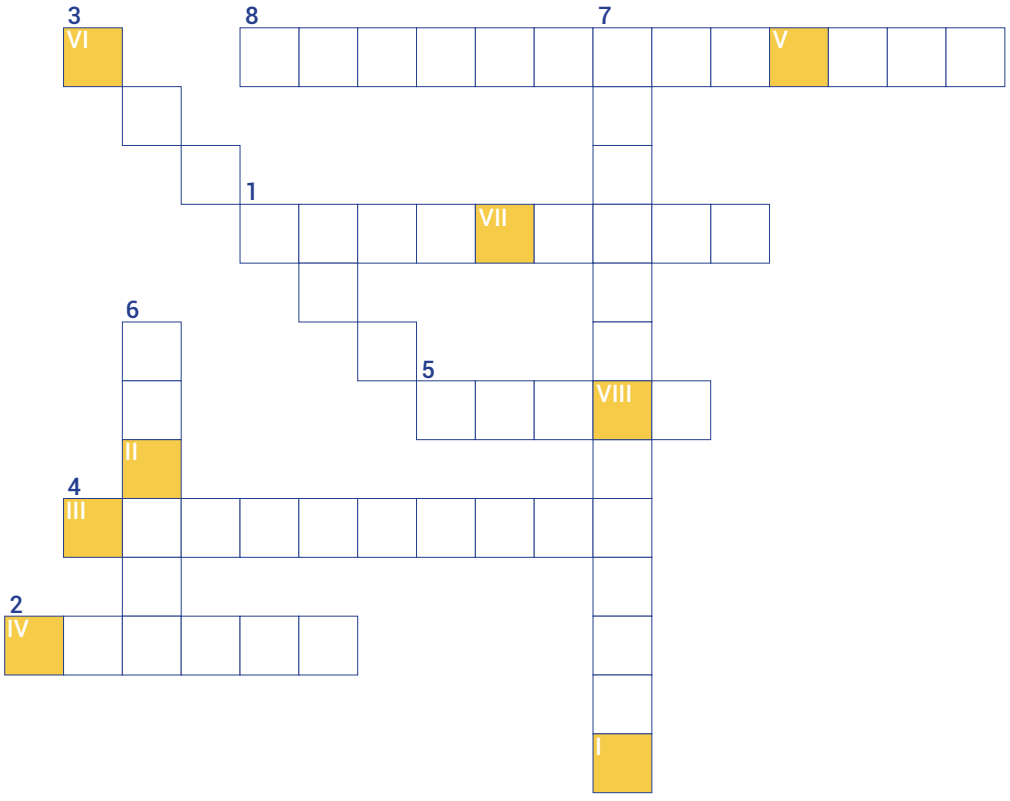
4 Inclusive approach to develop solutions for natural hazard risks?

5 What is the abbreviation for the International Strategy for Disaster Risk Reduction?

6 A regionally to transnationally relevant natural hazard? (Pl.)

7 International research association in the field of natural hazard management?

8 Core element in local governance processes?



Solution:

I	II	III	IV	V	VI	VII	VIII

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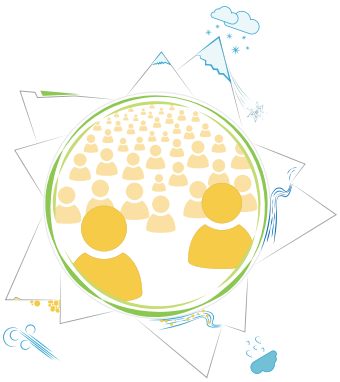
See for the detailed report on the risk governance status quo for natural hazards.

https://www.alpine-region.eu/action-group-8



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