

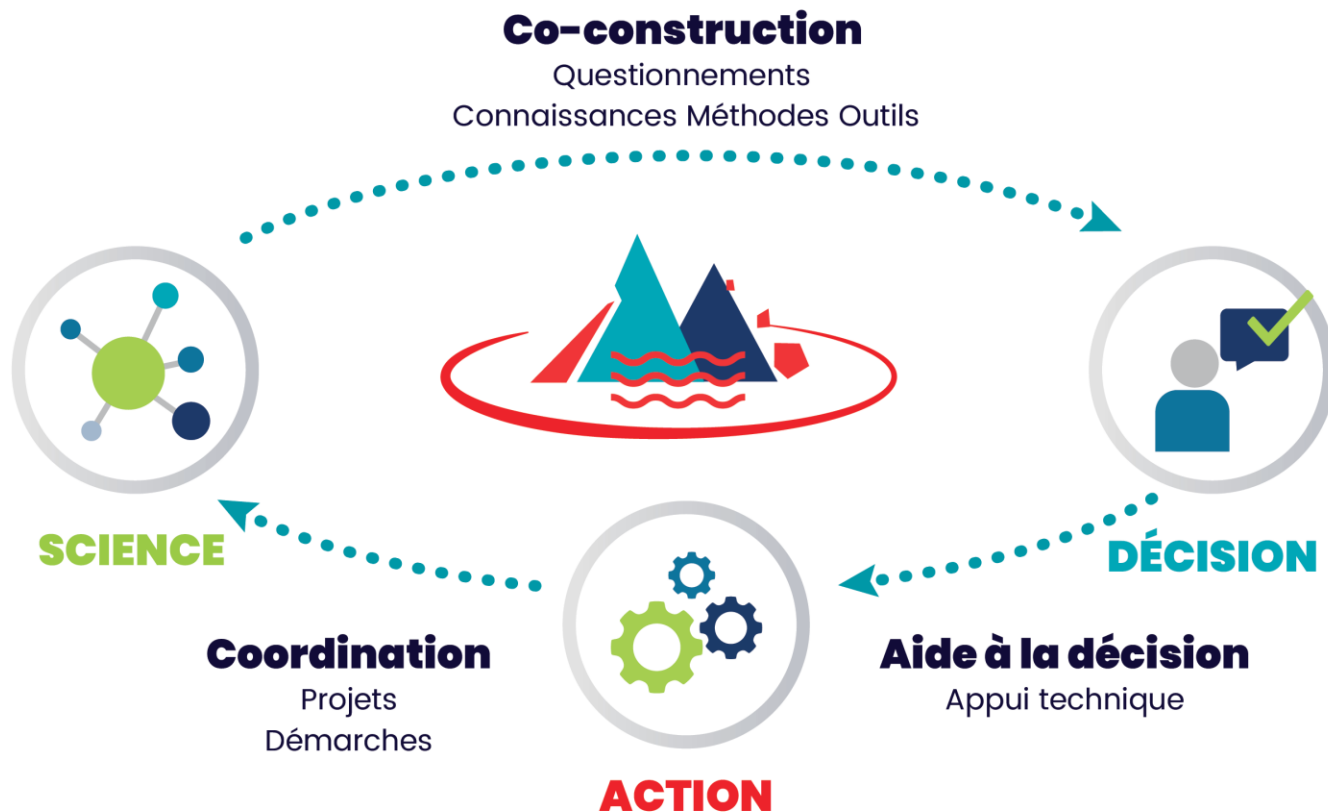


Integrated Natural Risk Management: Toolbox for climate change adaptation

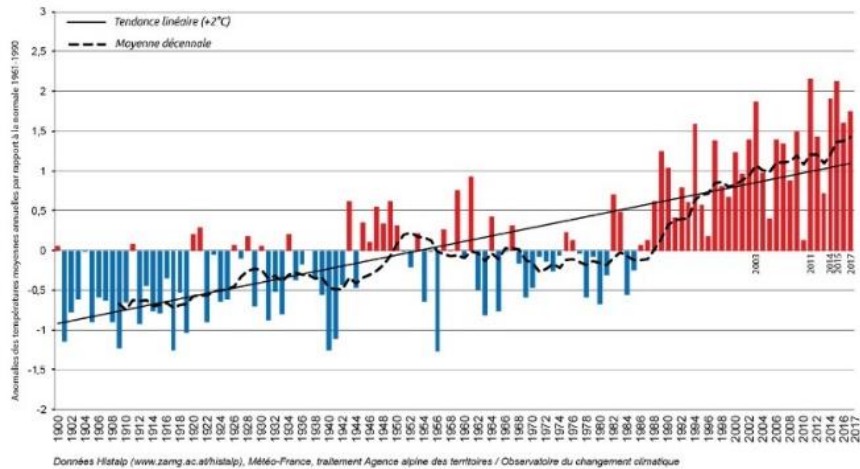
Simon GERARD – PARN – www.risknat.org



PARN : Alpine pole on natural risks



Natural risks in the alpine area



Observatoire du changement climatique dans les Alpes du Nord

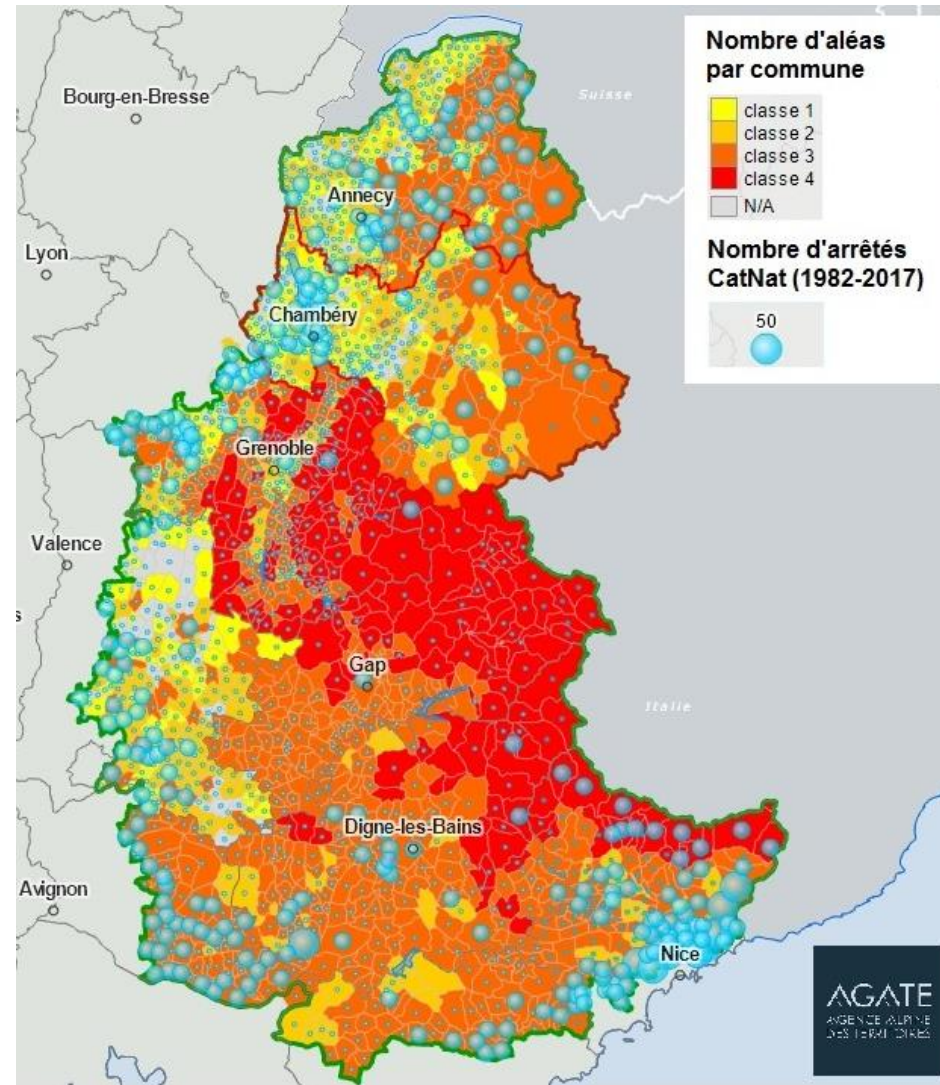
1900 1940 1980 2017

Modification of the **remarkable events** in terms of :

- Frequency
- Intensity

Modification of the **structure of territories**

- densification of urban areas
- Peri-urban sprawl
- Modification of different networks ...



Exemple of extrem events in the alpine area : debris flow and floods

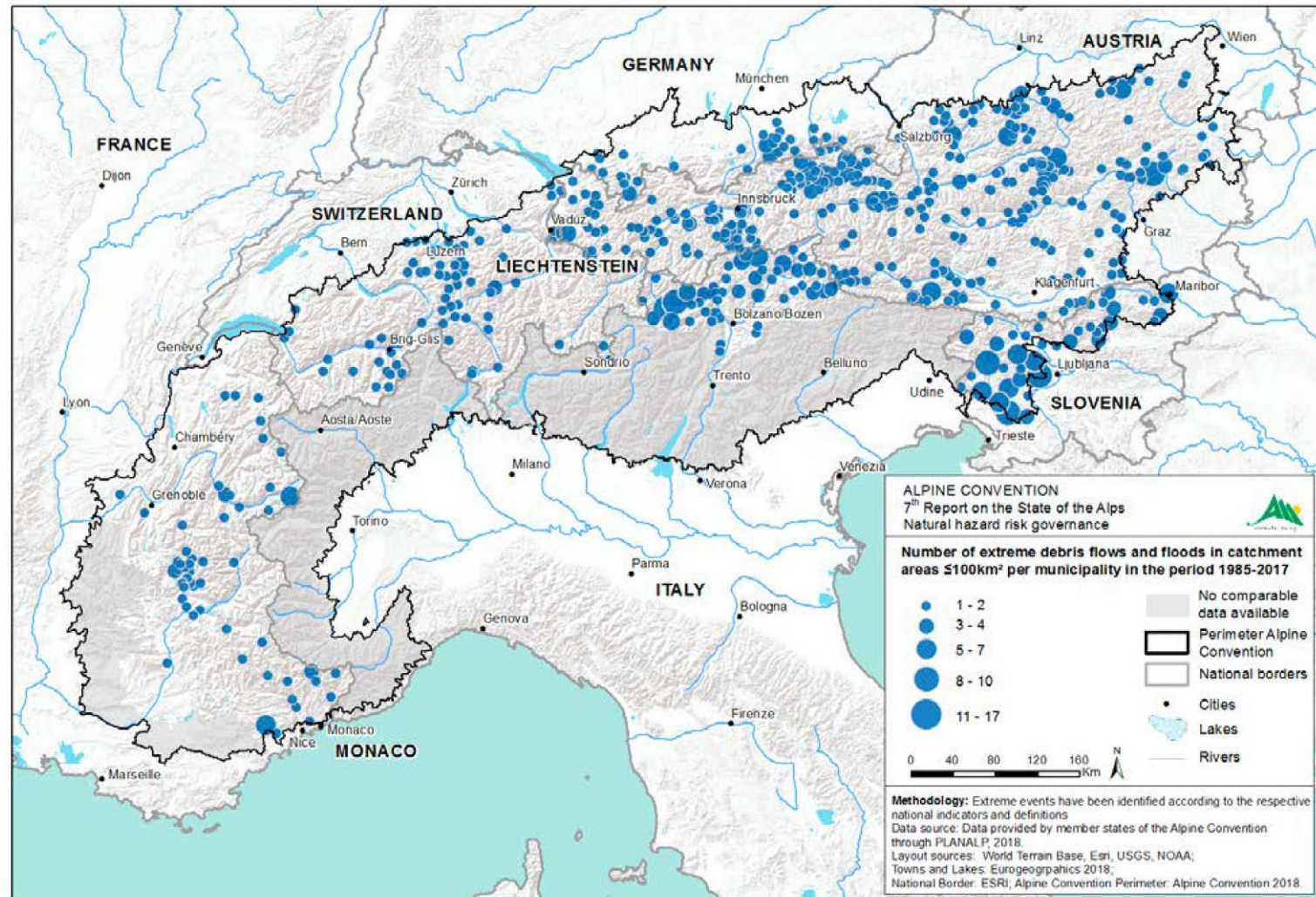
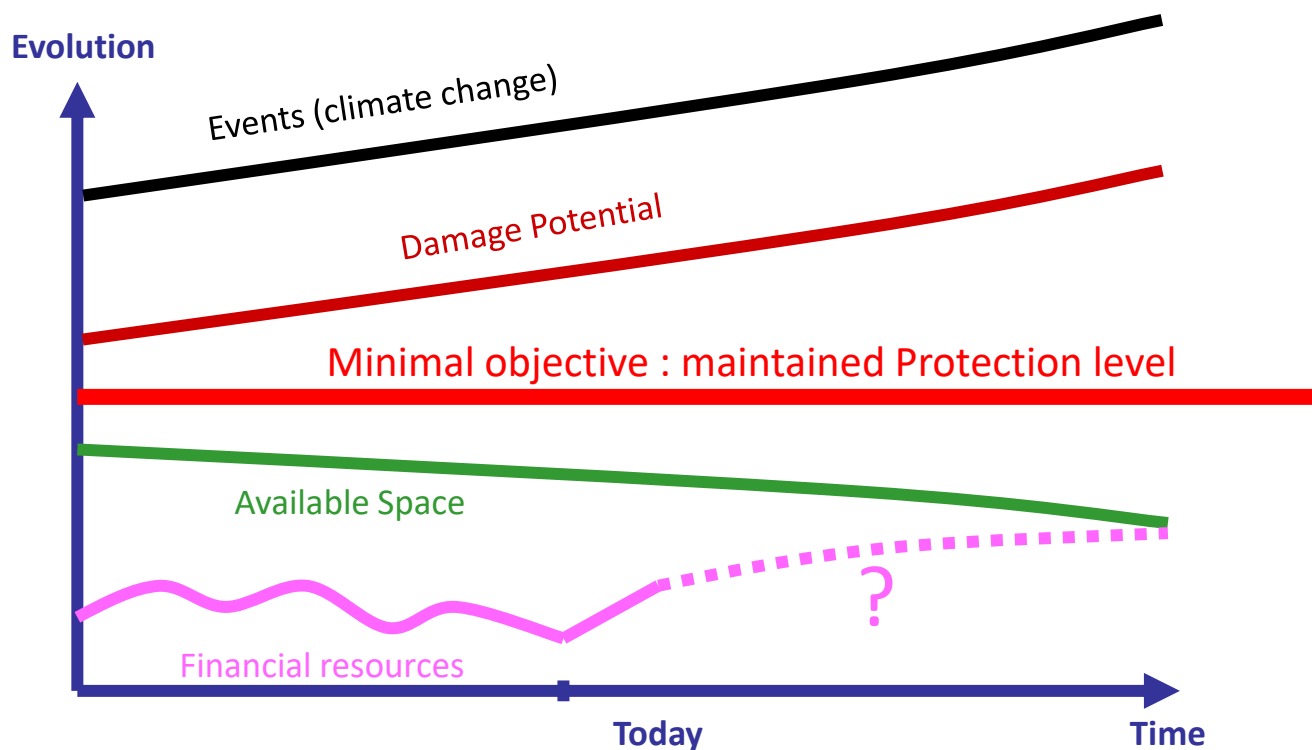



Figure 8: Extreme events in the Alps in the period 1985-2017: extreme debris flow and floods in catchment areas $\leq 100\text{ km}^2$ (Data source: PLANALP. Author: Environmental Agency Austria, 2018)

Leads to and **increase in vulnerability** to natural hazards in mountain areas



Exemple of the impacts of floods

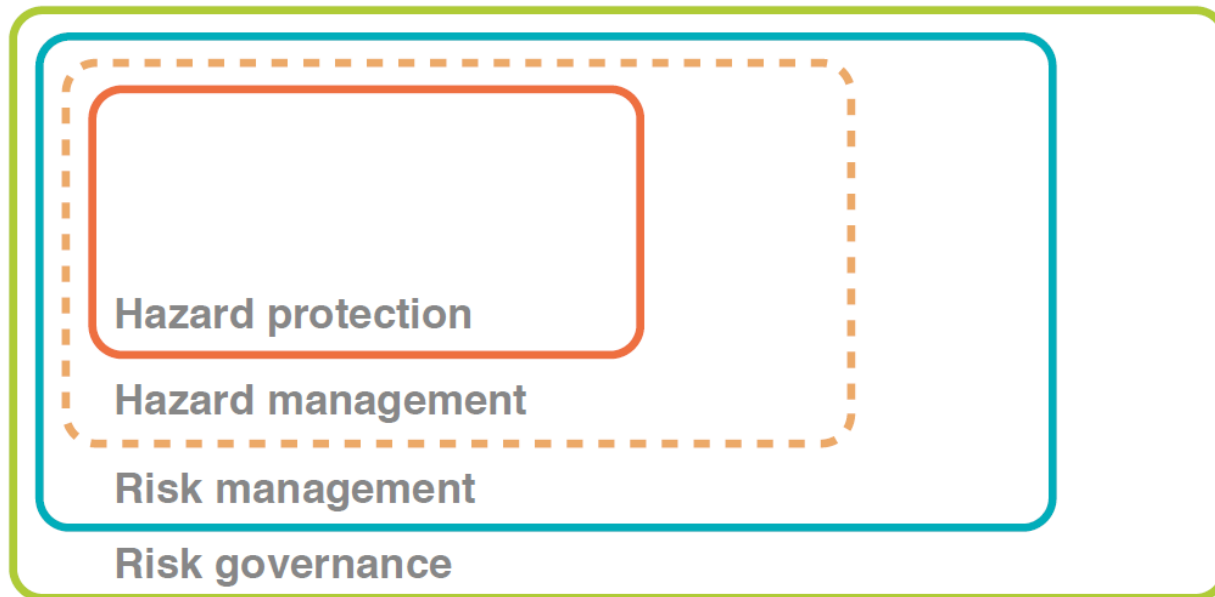


 Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Office fédéral de l'environnement OFEV

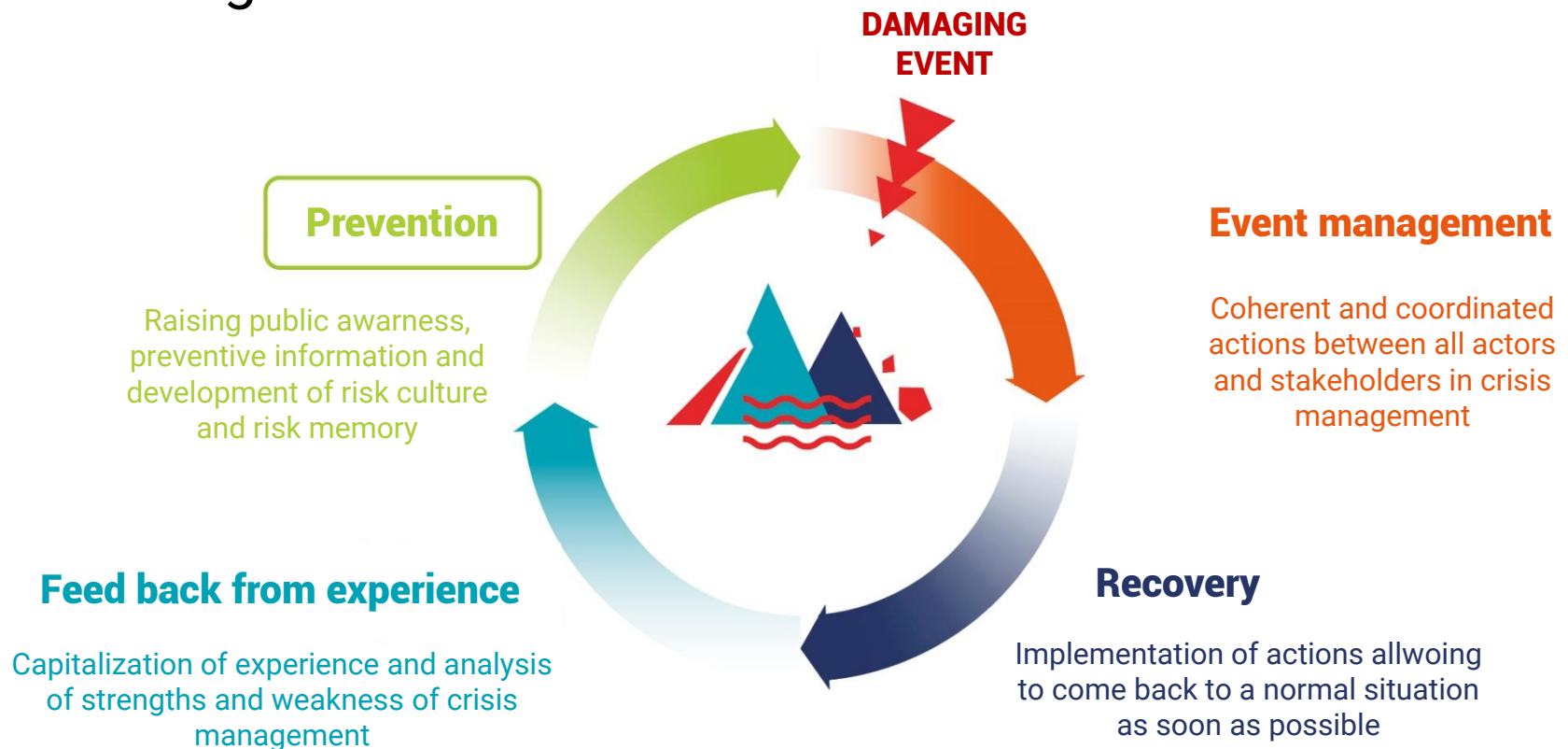
Andreas Götz
(Third Rhône correction presentation)

And leads to an evolution of **Risk Management** ...



... To achieve **Integrated Natural Risk Management (INRM)**

Integrated Natural Risk Management (INRM) : experimenting risk management at local scale



A new frame of reference for action and management.

- **Global approach** : crisis prevention and management
- **Territorialized approach** : on the scale of multi-communal living areas








Sites pilotes de Gestion Intégrée des Risques Nat

	Arlysère : Syndicat intercommunal
	BSM : commune de Bourg-Saint-Maurice-Les
	PGBEQ : Pays du Grand Briançonnais, des Ecr
	SMBP : Syndicat Mixte des Baronnies Proven
	SPM : Syndicat du Pays de Maurienne




Territoires Alpains de Gestion Intégrée des Risques





TAGIRN en cours

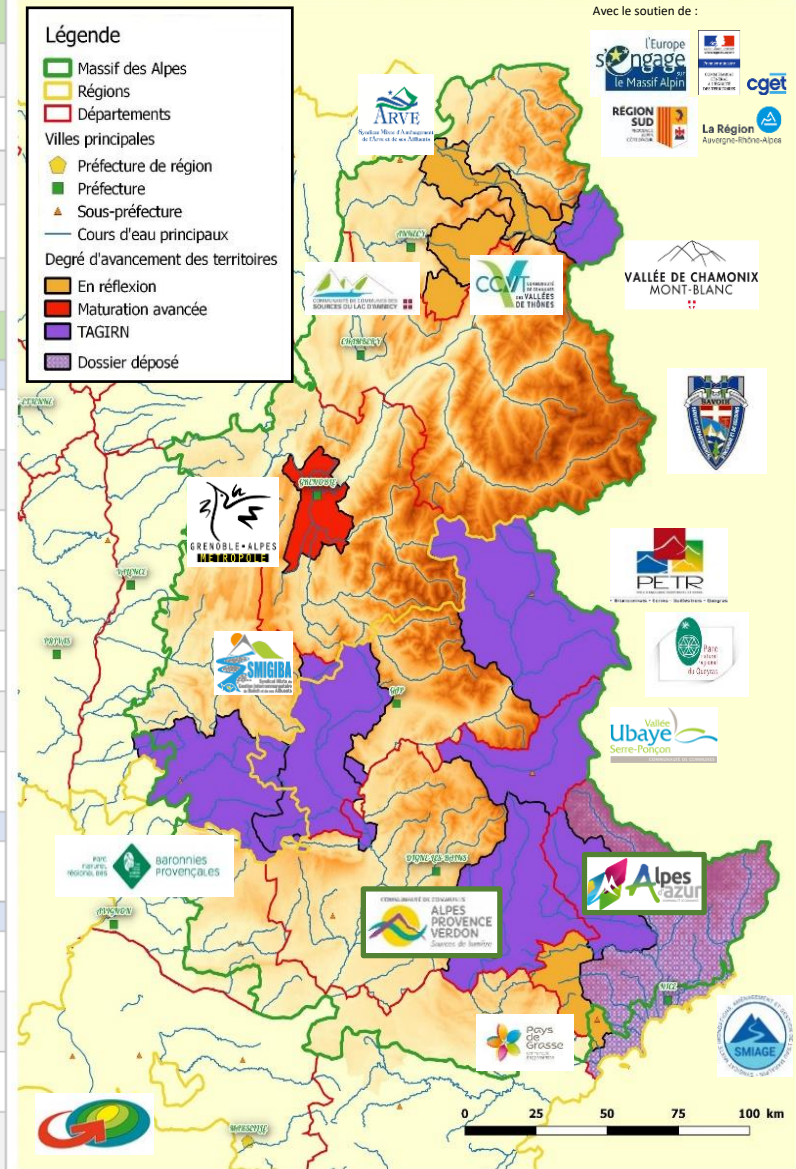
	CCAA : Communauté de Communes Alpes d'Azur	2018-2021
	CCAPV : Communauté de Communes Alpes-Provence-Verdon	2018-2021
	CCVCMB : Communauté de Communes de la Vallée de Chamonix Mont-Blanc	2016-2019
	CCVUSP : Communauté de communes de la Vallée de l'Ubaye Serre-Ponçon	2018-2021
	PETR BEGQ : Pôle d'Equilibre Territorial et Rural du Briançonnais, des Ecrins, du Guillestrois et du Queyras	2016-2019
	PNRBP : Parc Naturel Régional des Baronnies Provençales	2016-2019
	SMIGIBA : Syndicat Mixte de Gestion Intercommunautaire du Buëch et de ses Affluents	2018-2021

Territoire candidat à l'appel à propositions POIA 2017 (en cours d'instruction)

	SMIAGE : Syndicat mixte pour les inondations, l'aménagement et la gestion de l'eau / EPTB maralpin	Candidat 2017
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Territoires candidats à l'appel à propositions POIA 2018

	CCVT : Communauté de communes de la Vallée de Thônes	Candidat 2018
	GAM : Grenoble Alpes Métropole	Candidat 2018
	PNRQ : Parc Naturel Régional du Queyras	Candidat 2018
	SDIS73 : Service Départemental d'Incendie et de Secours de la Savoie	Candidat 2018

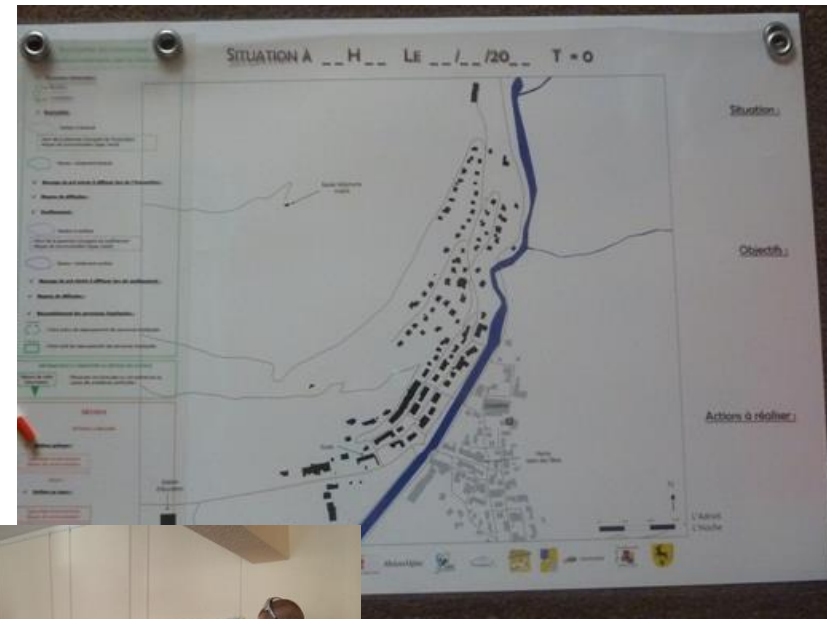


- Development and consolidation of **links between stakeholders**
- **Improvement of local risk culture** among the resident or tourist populations
- Underline the interest to work between the different actors involved, **outside emergency situations**
- Implementation of a **tool-box ready for use** to improve crisis management



- Requires and develops **proactive territories that are not limited to administrative obligations**
- Requires **few financial resources** but a **strong human investment**
- Must be highlighted as a **guarantee for durability** at all scales

Ex. Local civil security tool for anticipating crisis situations when facing avalanche events



Action frame



Pôle Alpin Risques Naturels

Alpine Center for Natural Hazards and Risks Prevention

Local

- Project territories
- Grenoble-Alpes-Metro.

Regional

- AuRA Region
- SUD/PACA Region



Interregional

- CIMA/POIA (GIRN & SDA)
- Alps-Climate-Risks

National

- CGET/Commissariat de massif des Alpes
- MTES/DGPR

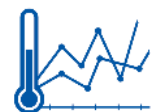


European

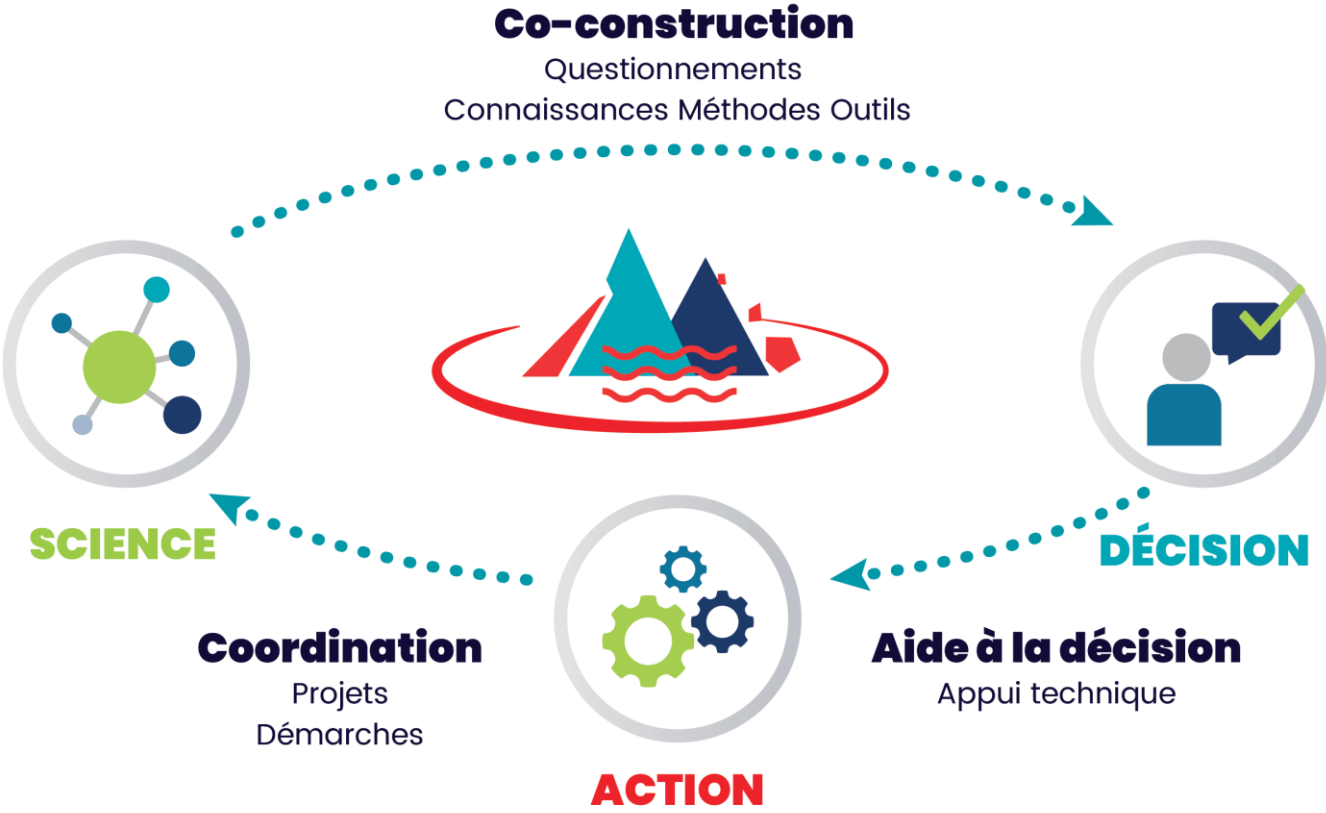
- Interreg projects
- EUSALP (AG8)
- Alpine Convention

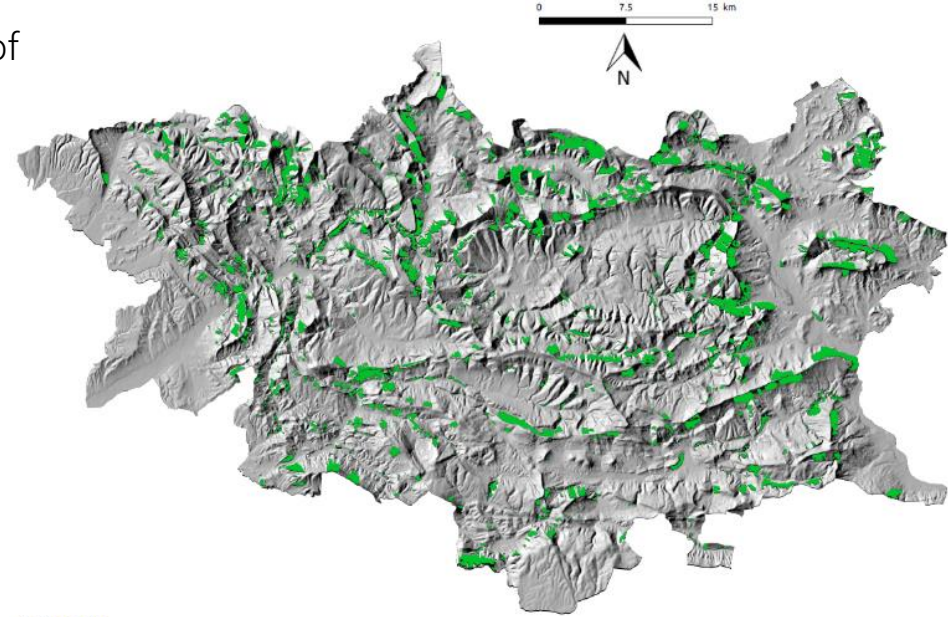
International

- IPCC
- FAO EFC WPMW
- Interpraevent



Support of the Science-Decision-Action (SDA) interface network





Examples of adapted research projects to the needs of Alpine territories

Légende

■ Forêts à fonction de protection

- Understanding and monitoring slow landslides (MLA3) and the coupling of landslides on slopes with solid transport in mountain streams (SIMOTER)
- Understanding, monitoring and communication for the management of alpine earthquake swarms (SISM@LP-Swarm)
- Integration of ecosystem services provided by protection forests against rockfall (VERTICAL)
- Consideration of the effects of climate change on the risks associated with permafrost degradation (PermaRisk) and forest fires (VULTER-Baronnies)
- Communication tools on natural hazards and risks for local resilience strategies (Co-RESTART)

- Implementation of adapted long term solutions for the alpine municipalities facing recurring problems on their own.
- Development of links between stakeholders, to improve integrated risk management, by adopting a Bottom-Up strategy.
- Use of the scientific network to find solution to the Alpine territories needs.

More information on www.risknat.org