

Alpine Territories of Integrated Natural Risk Management (TAGIRNs) for a better risk governance in the Alpine Region

Benjamin Einhorn, Olivier Cartier-Moulin, Carine Peisser (PARN) and Frédéric Berger (IRSTEA) – March 2019

What are obstacles and challenges for Integrated Natural Risk Management?

As elsewhere in the Alps, the French Alpine territories are confronted with natural phenomena that are random, rapid and of high intensity, which are now aggravated by climate change and are likely not only to cause significant material damage, but also to endanger local populations as well as tourists. These territories with specific forms of vulnerability (urbanisation of valley bottoms and slopes, strong need for accessibility, tourism etc.) must consider and provide appropriate natural risk management and prevention responses.

The "traditional" vision of natural risk management in France appears to be particularly sectoral and compartmentalized, both from the point of view of management time (prevention, crisis management, feedback, post-crisis recovery, etc.) and from the point of view of the variety of stakeholders involved. This segmentation does not often promote a global and dynamic vision of preventive action (over time) at the scale of a risk basin; and it is therefore responsible for a lack of collective appropriation of management issues.

"Integrated Natural Risk Management" (IRM¹), understood as a new frame of reference for action and management, favours a global (crisis prevention and management) and territorialized (on the scale of multi-communal living areas) approach to risks that complements their top-down management by the State. Thus, GIRM implies a new mode of extended governance, based on a strong collective involvement of both traditional risk management actors and territorial actors (citizens, economic and tourist operators, associations, etc.) to bring about a Bottom-Up risk management.

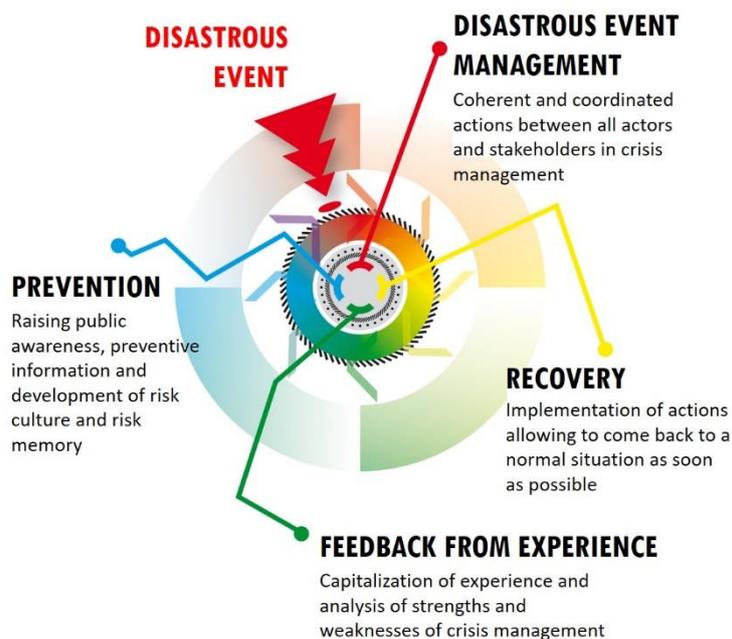


Figure 1: Range of actions contributing to IRM (adapted from ©PETR BEGQ/Esquiss').

¹ "GIRM" in French.

To this end, the Alpine Center for Natural Hazards and Risks Prevention (PARN) has been supporting alpine mountain communities since 10 years to better manage risks and adapt to climate change, by co-constructing local strategies for Integrated Natural Risk Management (IRM), broken down into multi-year programs of actions covering all stages of risk management across a territory (Fig. 1).

These new approaches were first experimented between 2009 and 2015 on 5 pilot sites, whose actions were capitalized and evaluated in order to identify good practices and promote their transferability to other sites. Their development is being continued as part of the 2014-2020 programming period within the network of the Alpine Territories of Integrated Natural Risk Management (TAGIRN)², which currently includes 8 active TAGIRNs and some new candidate territories (Fig. 2).

To support these local approaches, the Science-Decision-Action interface network for the prevention of natural risks (SDA) brings together communities of actors, with the aim of initiating research-action projects involving scientists and local actors to develop innovative tools adapted to alpine and local specificities³.

These innovative territorial and scientific actions benefits from European (ERDF), national (FNADT) and regional (AuRA and PACA Regions) co-funding. Through the networking of the various stakeholders involved in risk management, this interregional programme promotes the establishment of a multi-level governance and the territorialisation of Disaster Risk Reduction and Climate Change Adaptation policies in the alpine territories.

Alpine territories of GIRN 2019

8 Territories engaged in the process

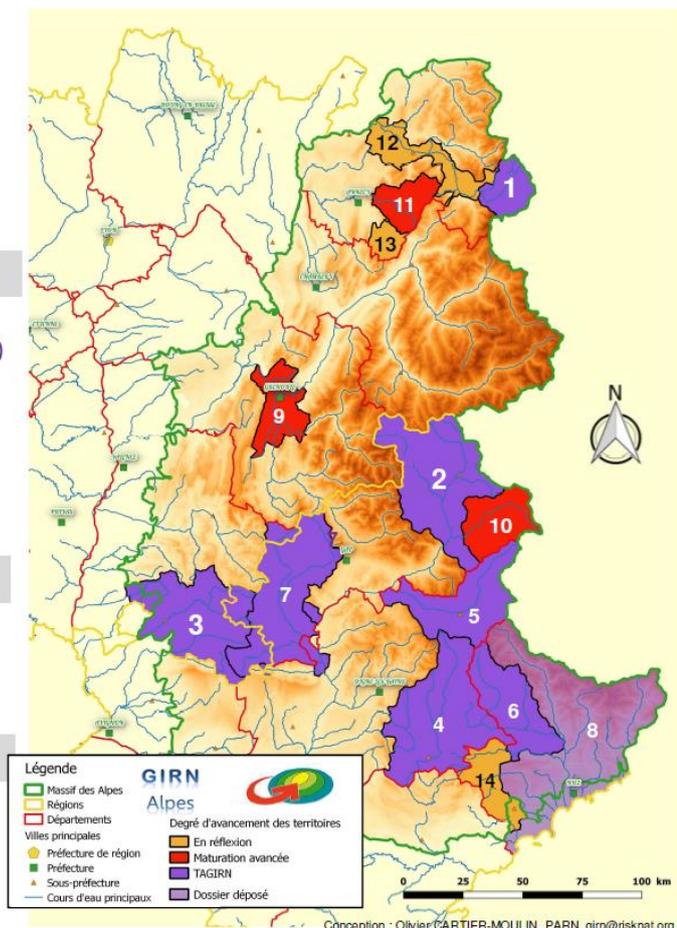
- CC Vallée de Chamonix Mont-Blanc (1)
- PETR Briançonnais, Ecrins, Guillestrois, Queyras (2)
- PNR Baronnies Provençales (3)
- CC Alpes Provence Verdon (4)
- CC Ubaye Serre-Ponçon (5)
- CC Alpes d'Azur (6)
- SMIGIBA (*Buëch*) (7)
- SMIAGE (*Alpes Maritimes*) (8)

3 Candidate territories

- Grenoble Métropole (9)
- PNR du Queyras (10)
- CC Vallée de Thônes (11)

3 Territories in the maturation process

- SM3A (*Arve*) (12)
- CC Sources du Lac d'Annecy (13)
- CA Pays de Grasse (14)



With the support of:



Figure 2: The French network of Alpine Integrated Natural Risk Management Territories (TAGIRN).

² « Territoires Alpains de Gestion Intégrée des Risques Naturels » : <http://risknat.org/girn/?lang=en>

³ <http://risknat.org/science-decision-action/?lang=en>

What worked well? Which success factors are there?

In particular, GIRN has made it possible to improve resilience to the risks of the territories:

- Development and consolidation of links between stakeholders (Fig. 3A) who are concerned but not necessarily involved in natural risk management. The example of the inter-municipal and interdepartmental exchange and coordination system at the Haute-Maurienne test site particularly illustrates this aspect;
- Improvement of the local risk culture among the resident or tourist populations, as well as within the local communities: for example, a participatory week on natural risks at the Clarée Valley test site or awareness video clips in Haute-Maurienne);
- Implementation of innovative tools to improve crisis management by setting up vigilance and alert systems (Chamonix Valley, Ubaye Valley: Fig. 3B, etc.).

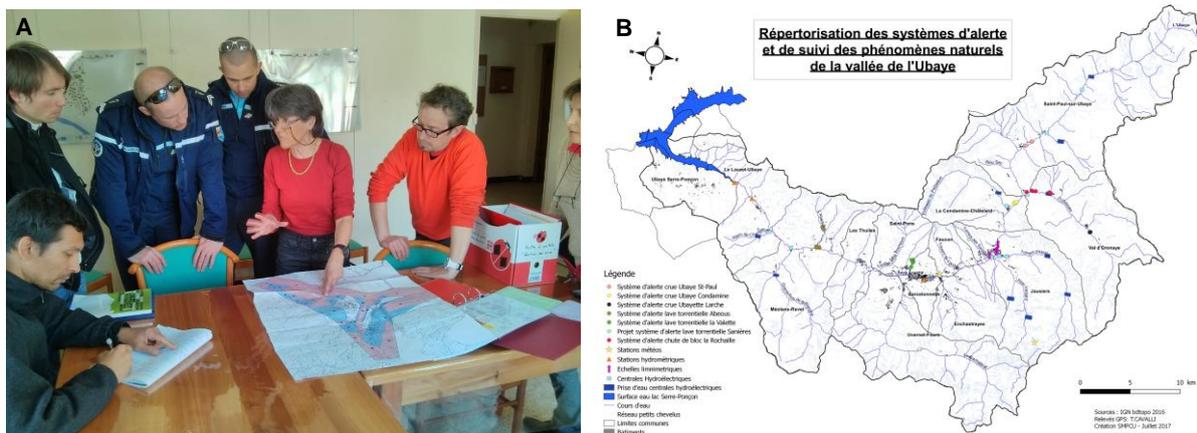


Figure 3: **A.** Exercise of integrated event management in the Haut-Guil Valley/Queyras (©PGBEQ). **B.** Networking of early warning and natural phenomena monitoring systems to better coordinate risk management at the scale of the TAGIRN of the Ubaye valley (©CCVUSP).

Similarly, the other significant impact of GIRN has been the improvement of local governance in natural risk management:

- The concerted work on the issue of natural risks between management stakeholders, open to a range of new actors (civil society, economic actors, etc.), has allowed the emergence of collective reflections on communal, inter-municipal and inter-departmental coordination for natural risk management.
- The actors involved in the process also underlined the interest they have in working together within the framework of GIRN, outside an emergency situation, and at new territorial and action levels. These networks are likely to be implemented much more efficiently in times of crisis.

PARN was able to identify several factors for the success of GIRN operations in the territories:

- Ensure that local authorities in the territory are voluntary, and natural risk management stakeholders are open to the idea of developing new approaches;
- Set clear objectives with visible short-term effects: the concrete meaning, operational nature of the actions and their visibility make it possible to encourage the mobilisation of territorial stakeholders;
- Respond to needs defined in a shared way and as part of a partnership approach involving local stakeholders;
- Develop a broad network of partners by involving key stakeholders in the territory and communicate regularly with them in order to build actions adapted to the context, disseminate GIRN throughout the territory, and promote broad acceptance of the project in the short, medium and long term.

Finally, the research-action projects funded under the 2014-2020 programming period make it possible to develop knowledge and decision-making tools adapted to the specific needs of Alpine territories (Fig. 4).

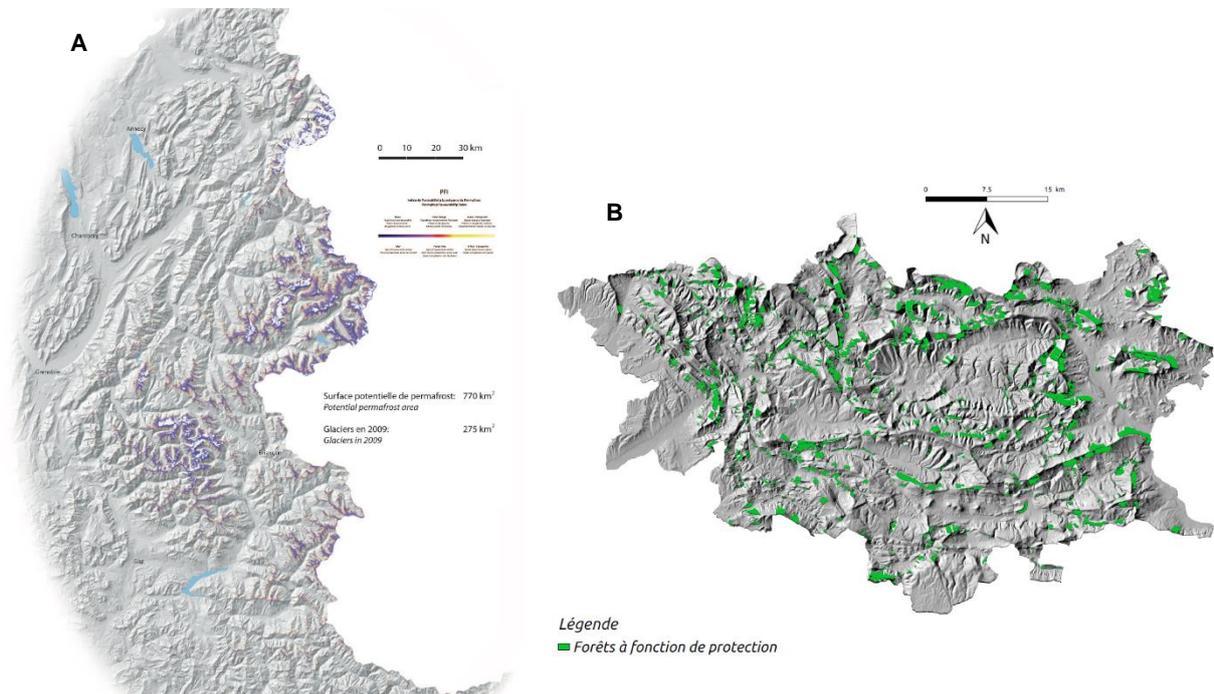


Figure 4: Examples of knowledge and innovative tools produced by Science-Decision-Action research projects. A: Map of the permafrost in the French Alps (PermaRisk project, ©EDYTEM/PACTE). B: Map of protection forests in the Regional Natural Park of Baronnies Provençales (VERTICAL project, ©Irstea).

These projects⁴ aim in particular to improve:

- 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).

What are the lessons learnt?

At the end of the 2009-2015 operation, an evaluation was carried out and made it possible to draw lessons from this first programming⁵. At all pilot sites, the impacts of the projects carried out were assessed on several levels:

- **Governance:** actions on good risk governance at a territorial level;
- **Integration:** i) degree of knowledge and assimilation from the various actors involved in the Integrated Natural Risk Management operation; ii) integration of the different stages of the integrated risk management cycle;
- **Innovation:** changes in the relationship between territorial and external stakeholders, supported by integrated management.

⁴ <http://risknat.org/science-decision-action/projets-de-recherche-action-cima-poi/>

⁵ <http://risknat.org/girn-alpes/bilan-de-l-operation-GIRN/index.html> (in French)

Among these lessons, we can say that:

- the development of GIRN requires relatively few financial resources, but a strong human investment is necessary in the short and medium term, led by a team associating a project leader and elected officials. Thus, the turnover of local driving forces may have slowed down the progress of some actions and thus reduced their efficiency.
- the networking of integrated management actors must be highlighted as a guarantee for durability, whether at the level of test sites, pilot sites or the whole programming.

Which added value can you identify for the implementation level in the alpine territories of GIRN?

The added value of GIRN in the territories is felt on several points.

First, the scope of action of the GIRN programs, at the level of a risk basin, has shown the relevance of moving beyond the traditional scope of the municipality to find out adapted solutions to the recurring problems facing the alpine municipalities on their own.

Secondly, GIRN commits local authorities to work beyond their regulatory obligations to address their own problems by inventing innovative solutions. As such, the innovative decision-making tools for mountain risk management developed by the research-action projects in support of the TAGIRNs represent a real added value of the 2014-2020 interregional programming.

Finally, sharing the experience between the various GIRN territories has made it possible to pool know-how, thus accelerating the deployment of actions through mutual assistance between sites, with the help of PARN. We noted that GIRN makes it possible to solve problems specific to mountain valleys, and the dynamic of sharing experience can continue throughout the Alps, beyond the French borders!

The French GIRN experiment is now being extended in the framework of the EU Strategy for the Alpine Region (EUSALP)⁶ through the project RockTheAlps⁷, with the objective to better integrate the protection forest ecosystem service against rockfall and extended to other gravitational risk via the project GreenRisk4Alps⁸.

⁶ <https://www.alpine-region.eu/action-group-8>

⁷ <https://www.alpine-space.eu/projects/rockthealps/>

⁸ <https://www.alpine-space.eu/projects/greenrisk4alps/>