

The Alpine Convention



Toward an integrated adaptation strategy
for the Alpine Region

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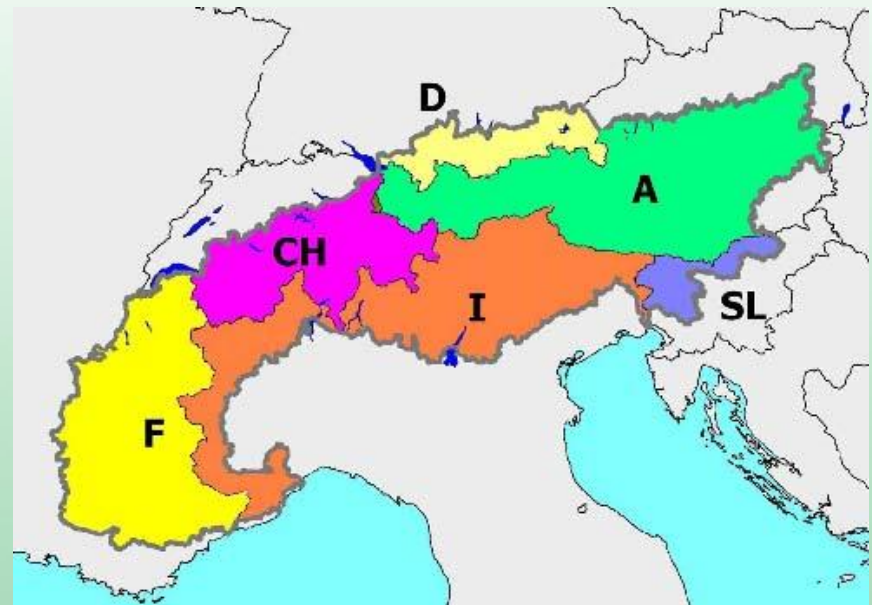
Aims of the Alpine Convention

- promoting sustainable development in the Alpine area
- protecting the interests of the people living in the Alps
- embracing the environmental, social, economic and cultural dimensions of the Alps.



Member States percentage of Area and Population

	Area	Population
Italia	27,3 %	30,1%
Austria	28,7%	23,9%
France	21,4%	18,0%
Switzerland	13,2%	12,8%
Germany	5,8%	10,1%
Slovenia	3,5%	4,7%
Monaco	0,001%	0,2%
Lichtenstein	0,008%	0,2%
ALPS	190.600 km²	13,6 million



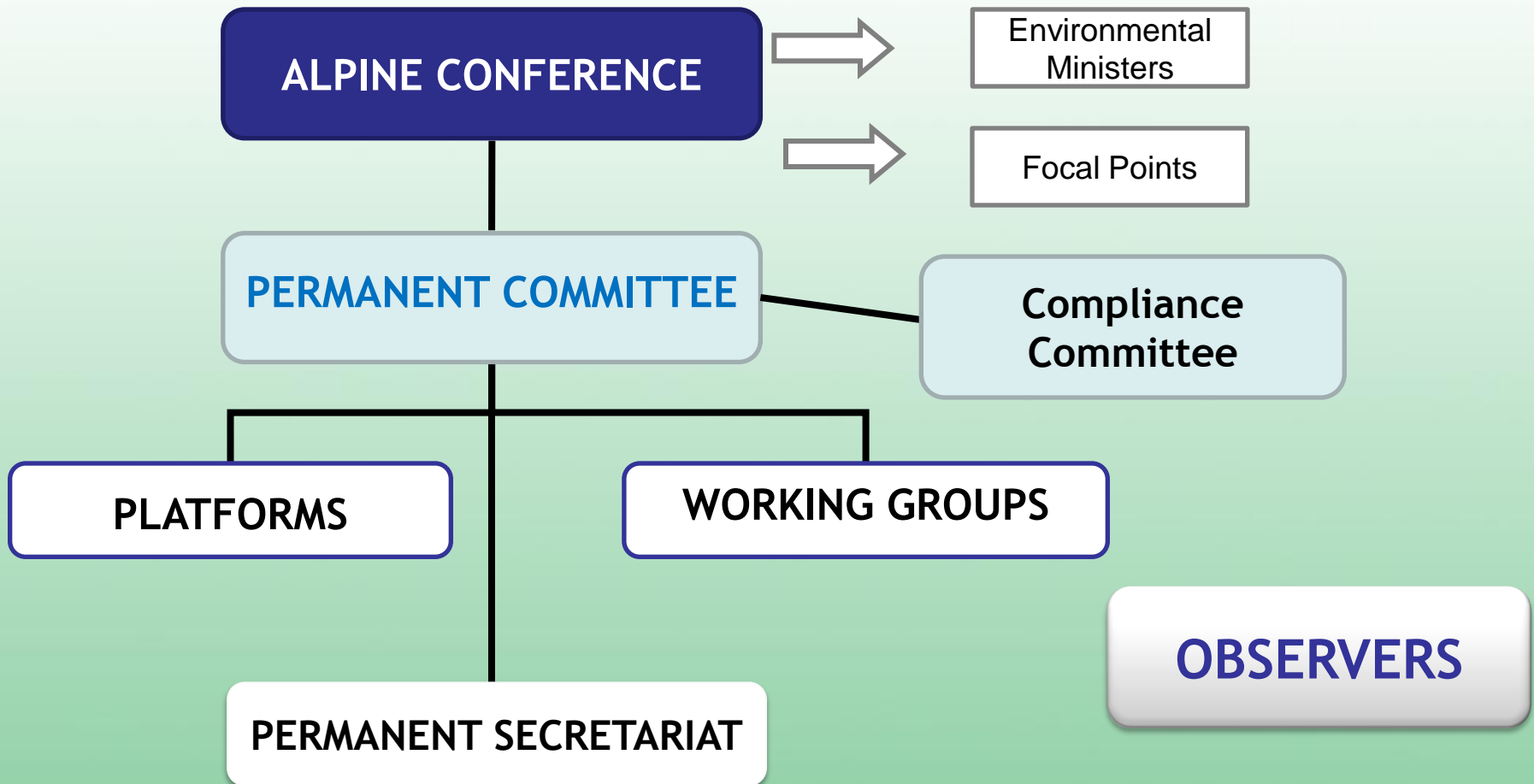


Main Instruments of the Alpine Convention

- Protocols
- Working Groups & Platforms
- Permanent Secretariat:
 - informing and communicating
 - observing and understanding
 - exchanging experiences
- Multilateral projects of the Contracting Parties
- Cooperation with Observers, networks, stakeholders



Alpine Convention organization chart

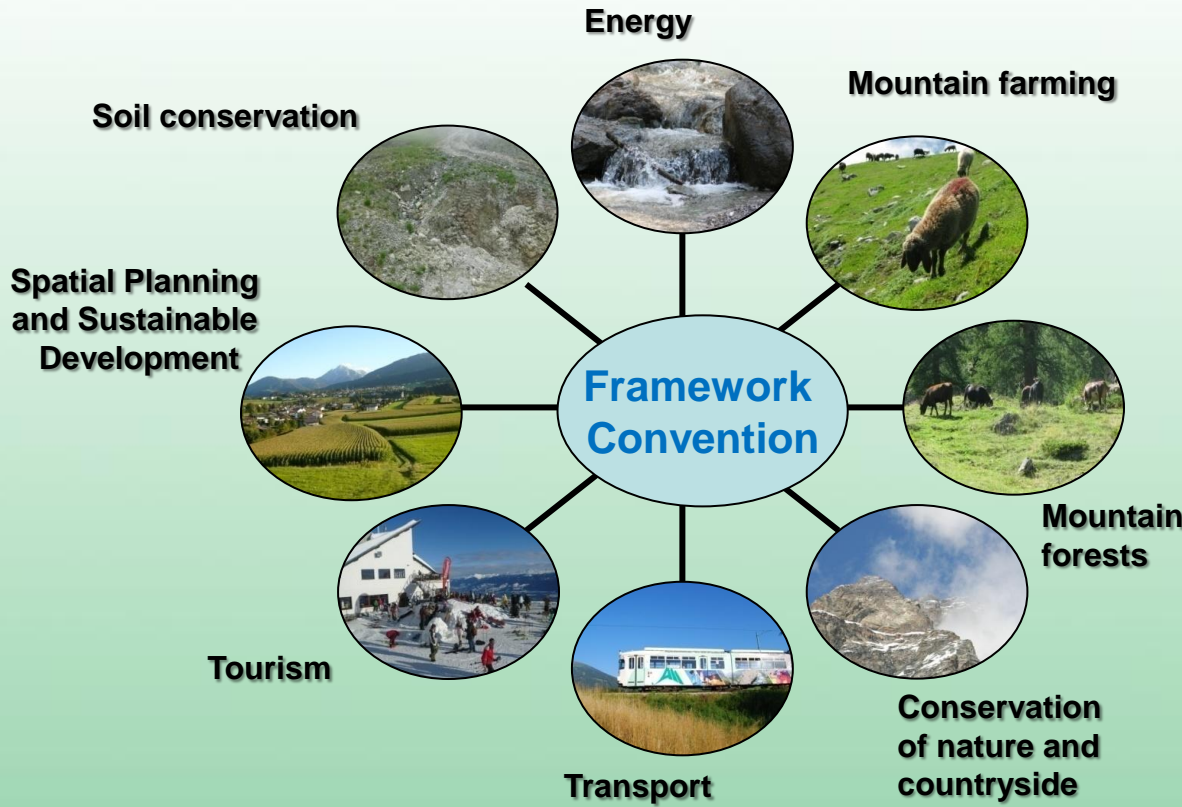


Framework Convention and its Protocols

The Convention is a **framework** that sets out the basic principles of all the activities of the Alpine Convention and contains general measures for the sustainable development in the Alpine region.

In the Protocols, **concrete steps** to be taken for the protection and sustainable development of the Alps are set out.

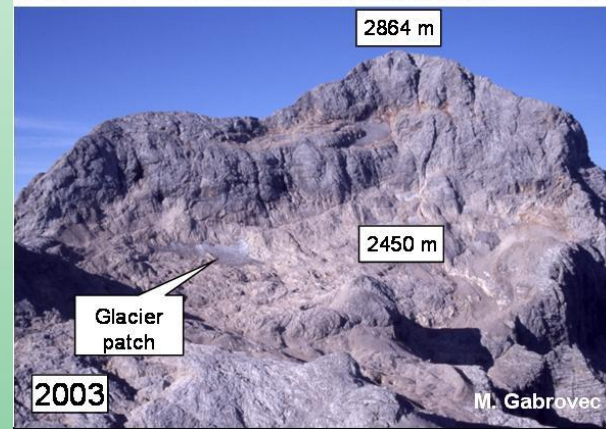
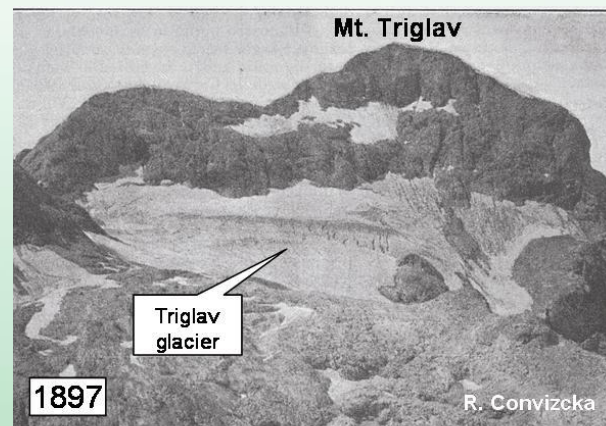
Signed and ratified Protocols are legally binding in the Contracting party.



Declaration on Population and Culture



Declaration on Climate Change





Declaration on Climate Change

- ... with respect to the progressive climate change for the future, indicates that it is necessary to develop appropriate strategies and activities for the Alpine area for the **adaptation** to the consequences that will result from the climate change.
- Average temperature increase since the pre-industrial age is clearly above the global average in this area → visible in: increase of the threat through **natural hazards**; visible effect in the form of the progressive **melting of glaciers and the reduction of the permafrost**.
- Recommendations for action to avoid a further progressive climate change.

Climate Action Plan

- Recommending alpine-specific measures;
- long-term initiatives, joint projects, exchange of experiences;
- precise schedule;
- support scientific research projects;
- addressing a variety of subjects:
 - public : at local, regional or national level;
 - private: influencing the behavior to cope with climate change.





A common adaptation strategy for the Alpine region



EU - policy context

- **GREEN PAPER** *“Adapting to climate change in Europe - options for EU action”* (2007)
- **WHITE PAPER** *“Adapting to climate change: Towards a European framework for action”* (2009)
 - ✓ Every effort must be made to adopt national or regional adaptation strategies at the member states
 - ✓ Adaptation strategies in Europe must be implemented in two phases

EU ADAPTATION STRATEGY (EAS) *“An EU Strategy on adaptation to climate change”* (April 2013)

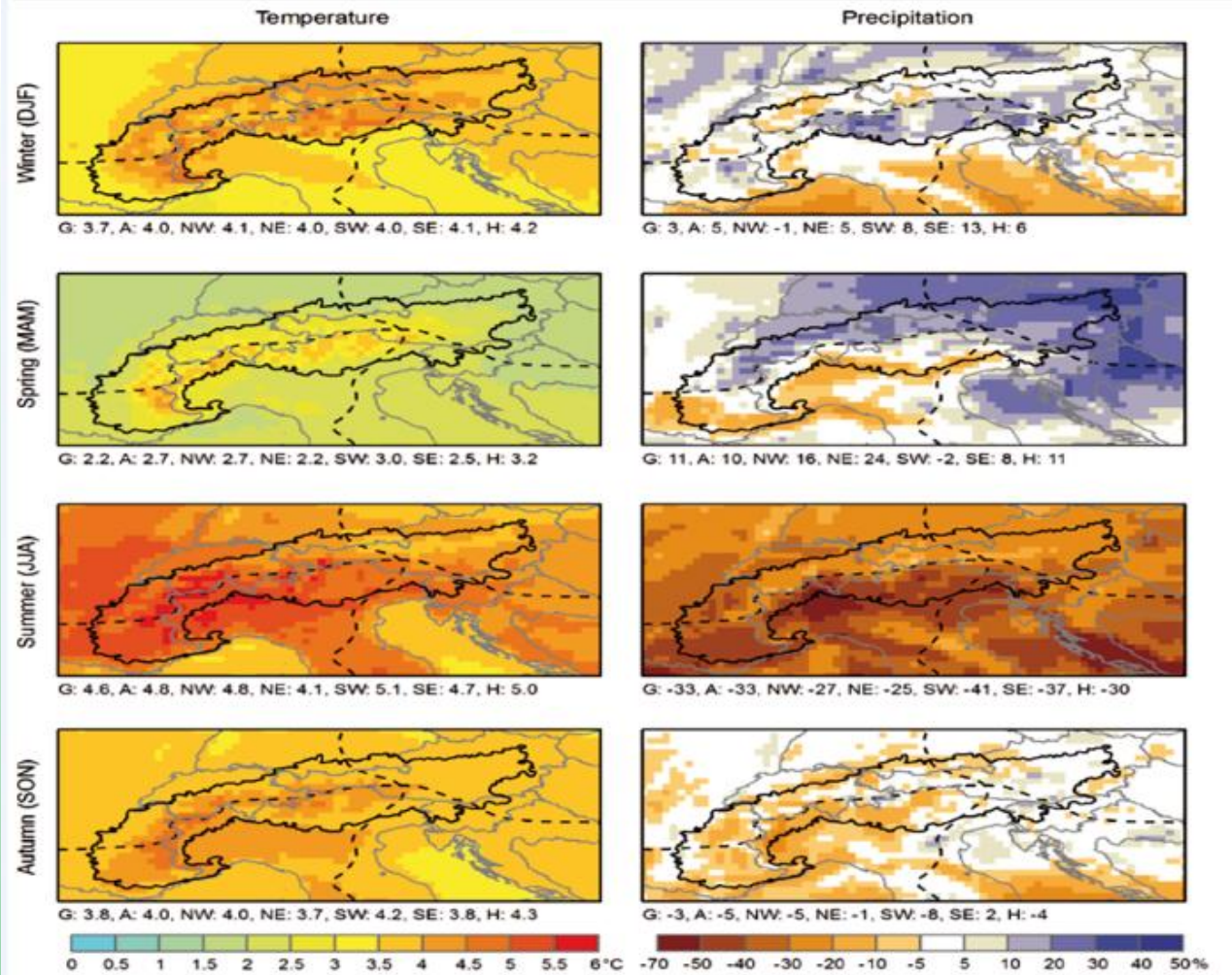
- ✓ Encourage all Member States to adopt comprehensive adaptation strategies
- ✓ Provide funding to support capacity building on adaptation (LIFE, cohesion fund)
- ✓ Bridge the knowledge gap
- ✓ Further develop Climate-ADAPT platform
- ✓ Mainstreaming adaptation into EU policies



Adaptation plans for mountain areas: why?

- ✓ The **increase of temperature** in the Alpine area in the last thirty years **is three times higher** than the average increase in the northern hemisphere.
- ✓ The **rainfall pattern is changing** in terms of reduction of rainy days and increase in intense rainfall events .
- ✓ The higher temperatures are accelerating the **criosphere melting processes** (glaciers, permanent snow and permafrost) and increased the associated risks .
- ✓ Acceleration of melting processes and changes of the rainfall patterns, will cause significant **changes in the hydrological regime** (reduction of the summer run-off and increase in winter run-off) with consequences in the **geological risks** and **future availability of water resources** .
- ✓ The Alpine region is characterized by valuable **social and ecological features** by **high vulnerability to natural hazards** and it is also subjected to growing **anthropogenic and environmental pressures**.

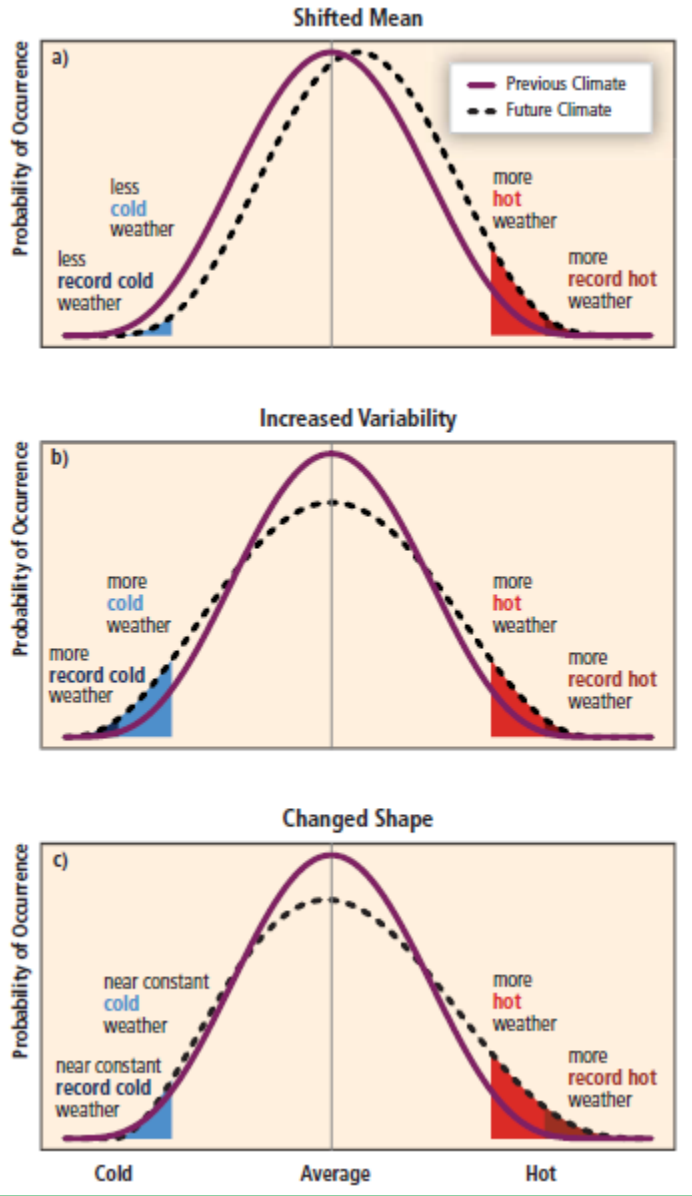
Projected changes in temperature and precipitations



Note: Left: absolute difference in temperature. Right: relative difference in precipitation. Regional statistics: G = Greater Alpine Region, A = Alps, NW = north-western Alps, NE = north-eastern Alps, SW = south-western Alps, SE = south-eastern Alps, H = higher than 1 500 m. Seasons are: Winter (December, January, February) Spring (March, April, May), Summer (June, July, August), Autumn (September, October, November).

Source: EURAC, 2008, based on data from CLM climate scenarios (Lautenschlager *et al.*, 2008).

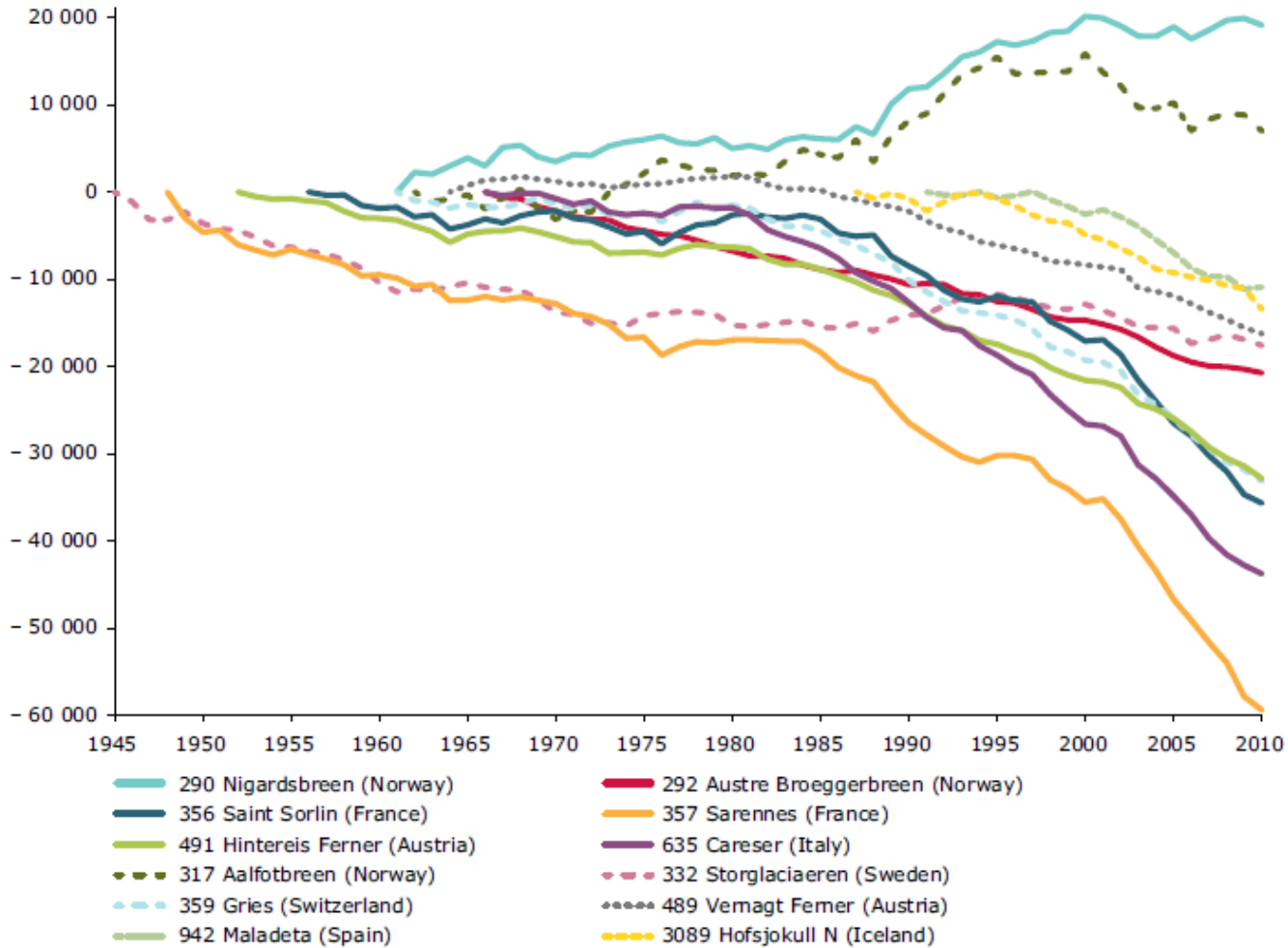
Impact of extreme events



Source: IPCC AS5 SPM 2013

Projected changes glaciers mass balance

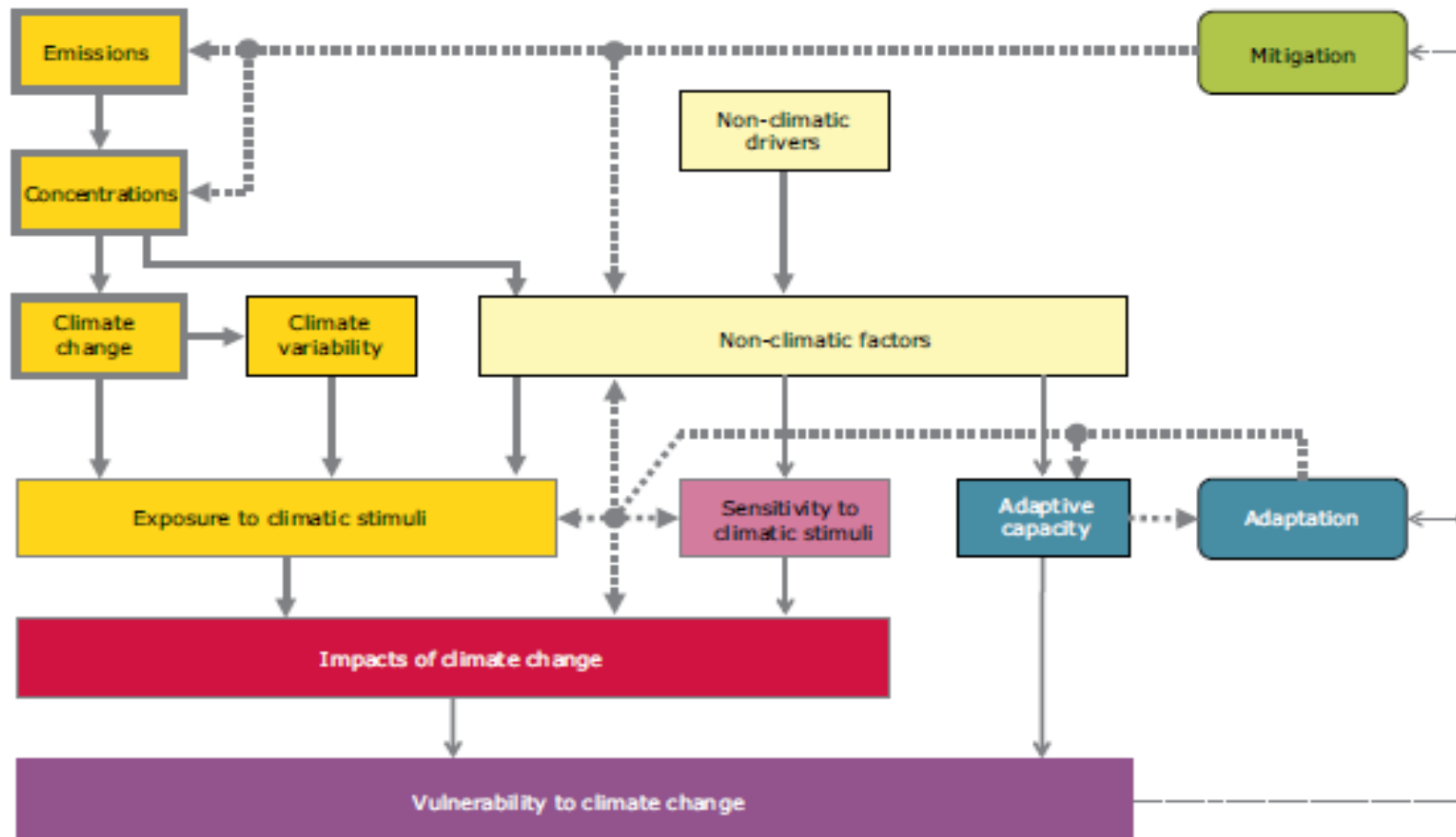
Cumulative net mass balance (mm water equivalent)



Source: Fluctuation of Glaciers Database (FoG), World Glacier Monitoring Service (<http://www.wgms.ch>), 2011; data for 2010 are preliminary.



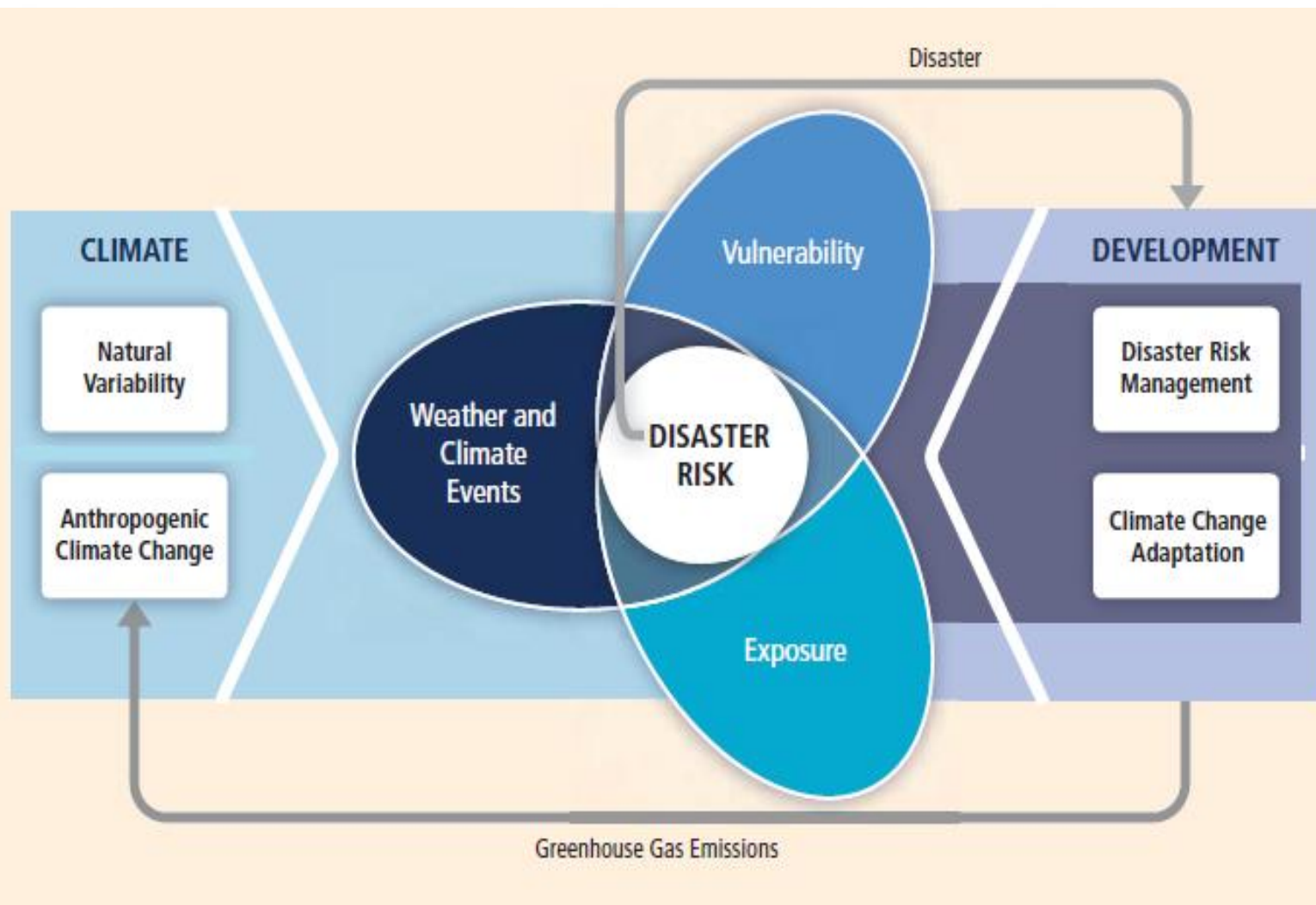
Vulnerability assessment framework



Source: Adapted from Füssel and Klein, 2006.

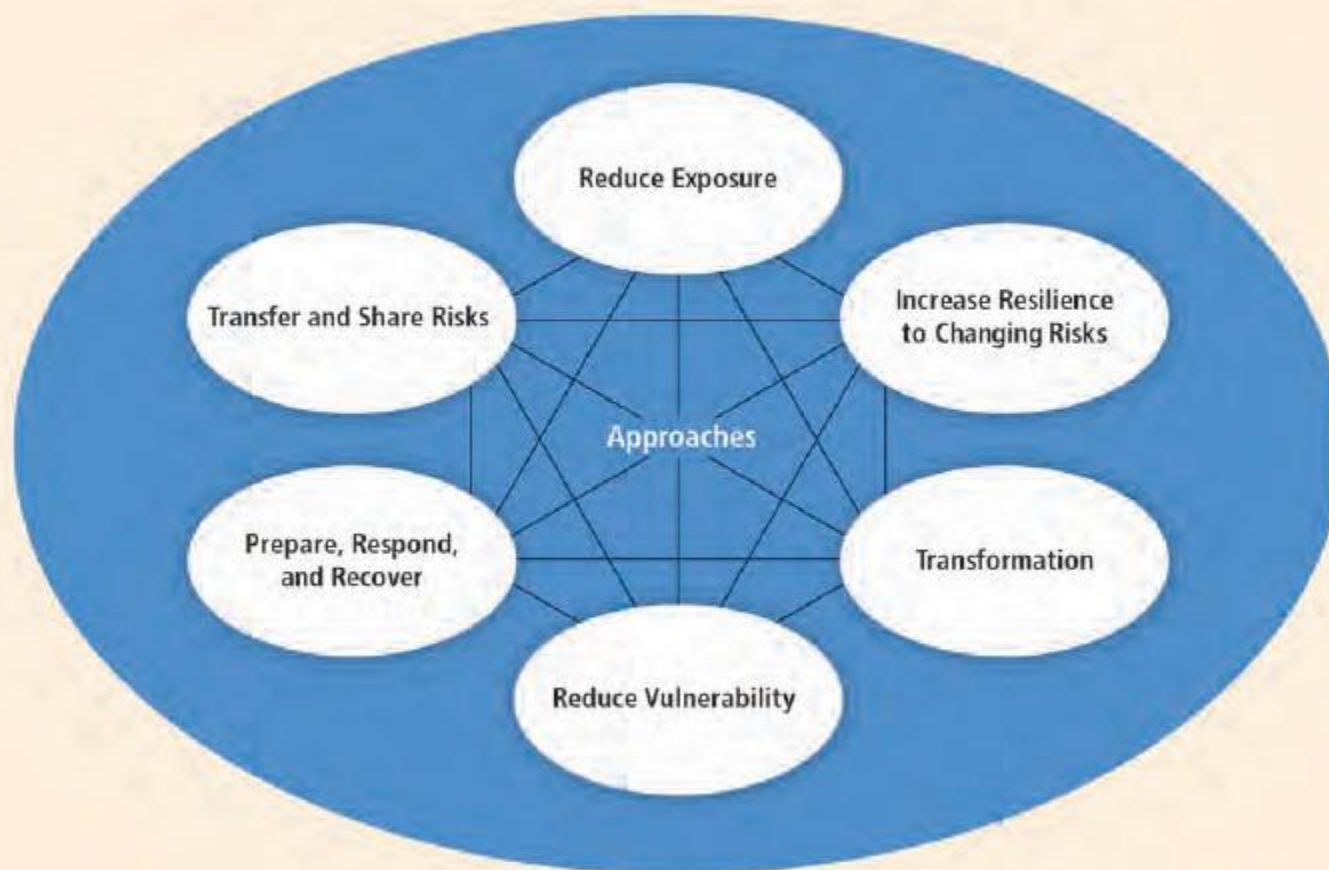


Climate change and disaster risk



Adaptation and risk management

Adaptation and Disaster Risk Management Approaches for a Changing Climate





Adaptation strategy for Alpine countries: sectors

Physical environment

- 1) *Water resources (quantity and quality)*
- 2) *Land and soil degradation*
- 3) *Hydro-geological risk*

Human health and ecosystems

- 4) *Human health*
- 5) *Terrestrial ecosystems*
- 6) *Water ecosystems*
- 7) *Forests*

Economic activities

- 8) *Agriculture and food production*
- 9) *Energy*
- 10) *Tourism*
- 11) *Urban areas*

Critical infrastructures

- 12) *Transport*
- 13) *Cultural heritage*



Alpine adaptation strategy: steps forward

STEP 1- *climatological characterization*: current trends and future projections of the main climatic variables (rainfall, snowfall, temperatures, heat waves and storms)

STEP 2- Evaluation and estimate of the present and future *CC impacts for each sector* considering their *vulnerability* to present an future climate and *resilience* factors.

STEP 3- Evaluation of *existing adaptation measures* in each sector, and estimation of their adaptive capacity

STEP 4- Proposal of *future adaptation measures* and actions for each sector



Thank you for your attention!

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