

# The EEA mission

*The European Environment Agency is the EU body dedicated to providing sound, independent information on the environment*

*We are a main information source for those involved in developing, adopting, implementing and evaluating environmental policy, and also the general public*

*Boundary organisation: building bridges between science and policy*



## **EEA clients are...**

- **Institutions and governments: European Commission, European Parliament, Council, EEA member countries**
- **Policy influencers: NGOs, business, media, advisory groups, scientists, debaters**
- **General public**

**32 EEA member and 6 collaborating countries**



# Resource efficiency, the green economy and environmental services in Europe



**VIIth European Mountain Convention**

"European Mountain Regions- A spirit of Innovation"

15<sup>th</sup>-17<sup>th</sup> September 2010, Lillehammer, Norway



**Europe's ecological backbone:  
recognising the true value of our  
mountains**

# Today's three systemic crises

- Systemic multiple crises: finance/real economy, energy/climate, ecosystem/biodiversity, social
- Trust crisis: exposure of concealed debts (including ecological debt which is not even recorded in accounting books)
- Governance crisis: responses are a series of untested rescue packages and trial and error solutions



<b>COMMON FEATURES</b>	<b>FINANCIAL CRISIS</b>	<b>CLIMATE CRISIS</b>	<b>NATURAL RESOURCES CRISIS</b>
<b>CAPITAL DESTROYED</b>			
<b>Financial</b>	YES	YES	YES
<b>Human</b>	YES	YES	YES
<b>Natural</b>	YES	YES	YES
<b>Social</b>	YES	YES	YES
<b>RISKS/ DEBTS PASSED ON TO CURRENT AND FUTURE 'OTHERS'?</b>	YES	YES	YES



<b>COMMON FEATURES</b>	<b>FINANCIAL CRISIS</b>	<b>CLIMATE CRISIS</b>	<b>NATURAL RESOURCES CRISIS</b>
<b>MARKET PRICES: Cover All costs?</b>	NO	NO	NO
<b>Reflect real risks?</b>	NO	NO	NO
<b>TRANSPARENT TRANSACTIONS?</b>	NO	NO	NO
<b>ACCOUNTING FOR WHAT MATTERS?</b>	NO	NO	NO
<b>EARLY WARNINGS HEADED?</b>	NO	NO	NO
<b>ROBUST AND SUSTAINABLE SYSTEMS?</b>	NO	NO	NO



# Some features of good governance

- Maintaining capitals
- Balancing resource consumption
- Public participation
- Meeting needs of today's ageing populations and next generations



<b>GOOD GOVERNANCE</b>	<b>FINANCIAL SYSTEMS</b>	<b>ENERGY SYSTEMS</b>	<b>ECOSYSTEMS</b>
<b>CONSUMING FLOWS WHILST MAINTAINING QUALITY AND QUANTITY OF ASSETS</b>	CONSERVATIVE ASSET/ DEBT RATIOS	FROM STOCKS OF FOSSIL FUELS TO FLOWS OF RENEWABLES	MAINTAINING NATURAL CAPITAL STOCKS WHILE SECURING FLOWS OF ECOSYSTEM SERVICES
<b>ALL RISKS AND DEBTS INTERNALISED INTO MARKET PRICES</b>	REALISTIC ASSET/ DEBT PRICING	EXTERNALITIES INTERNALISED INTO PRICES	EXTERNALITIES INTERNALISED INTO PRICES
<b>ECONOMIC TAX &amp; SUBSIDY REFORM TO FINANCE “GREEN NEW DEAL”, AGEING POPULATION COSTS ETC</b>	<b>“TOBIN TAX” ON CURRENCY / COMMODITIES SPECULATION?</b>	<b>FROM TAXING PEOPLE TO TAXING ENERGY AND RESOURCES</b>	<b>FROM TAXING PEOPLE TO TAXING ENERGY AND RESOURCES</b>
<b>TRANSPARENT TRANSACTIONS</b>	UNDERSTANDABLE FINANCIAL PRODUCTS	MARKET PRICES REVEALING “ECOLOGICAL TRUTH”	MARKET PRICES REVEALING “ECOLOGICAL TRUTH”



# 2010 must mark a new beginning!

***‘ I want Europe to emerge stronger from the economic and financial crisis.***

***Our new agenda requires a coordinated European response, including with social partners and civil society.’ – President Baroso***

**And...**

**New EU Treaty: Territorial cohesion added as a strategic goal**





# Europe 2020 puts forward three mutually reinforcing priorities

- Smart growth: developing an economy based on knowledge and innovation.
- Sustainable growth: promoting a more resource efficient, greener and more competitive economy.
- Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.

# **Resource efficiency: the main show in town!**

- **Policy framework coordinated by EC Secretariat General**
- **Targeted environmental focus by Commissioner Janez Potočnik**
- **Trade and Enterprise have a resource policy (ors & minerals)**
- **Water Framework directive – management plans at river bassin level**

# What is it about? Answering to Commissioner Janez Potočnik

*In essence, resource efficiency is about using natural capital and ecosystem services smartly so as to maximize welfare, minimise wastes – air emissions, sewage discharges and solid wastes - their impacts on ecosystems and people's health, and thereby reduce costs and increase Europe's competitiveness in the global economy.*

# Resource efficiency therefore has several different, sometimes conflicting objectives

- *Improvement of the economy's environmental performance referred to as "eco-efficiency" (or first decoupling). It is currently assessed by the ratio: value of commodities/ natural resource use*
- *Inter-generational optimisation of non-renewable resource use, i.e. depleting resources by means of resource savings and/or substitutions between different resources (the "weak sustainability" paradigm)*
- *Improvement of the ratio: value of commodities/ impacts on ecosystems (inland, sea and atmosphere systems). This "second decoupling" needs to consider the impacts of resource use on human health, ecosystems (fragmentation, resilience, biological productivity, biodiversity)*
- *Maintenance over time of the living natural capital to continue to supply sufficient quality and quantity economic resources as well as life support (clean water, clean air, stable climate, food...). Efficiency of resource use in this case refers to the ecosystems' carrying capacity*

# Towards upgrading indicators on efficiency

- We must distinguish between managing the exhaustion of depletable non-renewable resources and maintaining the quality of non-depletable renewable resources
- We must reflect two distinct phenomena and their inter-relationships:
  - the demands that society makes on ecosystems for natural resources to fuel economic development,
  - and maintaining the structure and functions of ecosystems so that they can continue providing these stocks of natural resources for economic development as well as the regulating and cultural services provided by ecosystems that sustain life

# Letter by President Barroso to the European Parliament, 7 Sept

The 2011 Work programme of the EC will include:

- Charting a low-carbon economy to 2050, and setting out the scenarios within which the EU can revolutionise energy and transport in the decades ahead
- Proposals to mainstream climate change into EU policies
- Proposals for the modernisation and reform of the common agricultural policy
- An energy efficiency strategy mapping out how to reach the target of 20% for 2020, for example in the building, utility and transport sectors
- Putting in place the right regulatory framework to pave the way for energy infrastructure, and prioritising smart grids in particular
- A new approach to Europe's strategic transport infrastructure

# Europe's ecological backbone: recognising the true value of our mountains



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Mountains (36 % of Europe's area) are often recognised as areas with permanent natural handicap – steep slopes, less fertile soils, extreme climate, remote location



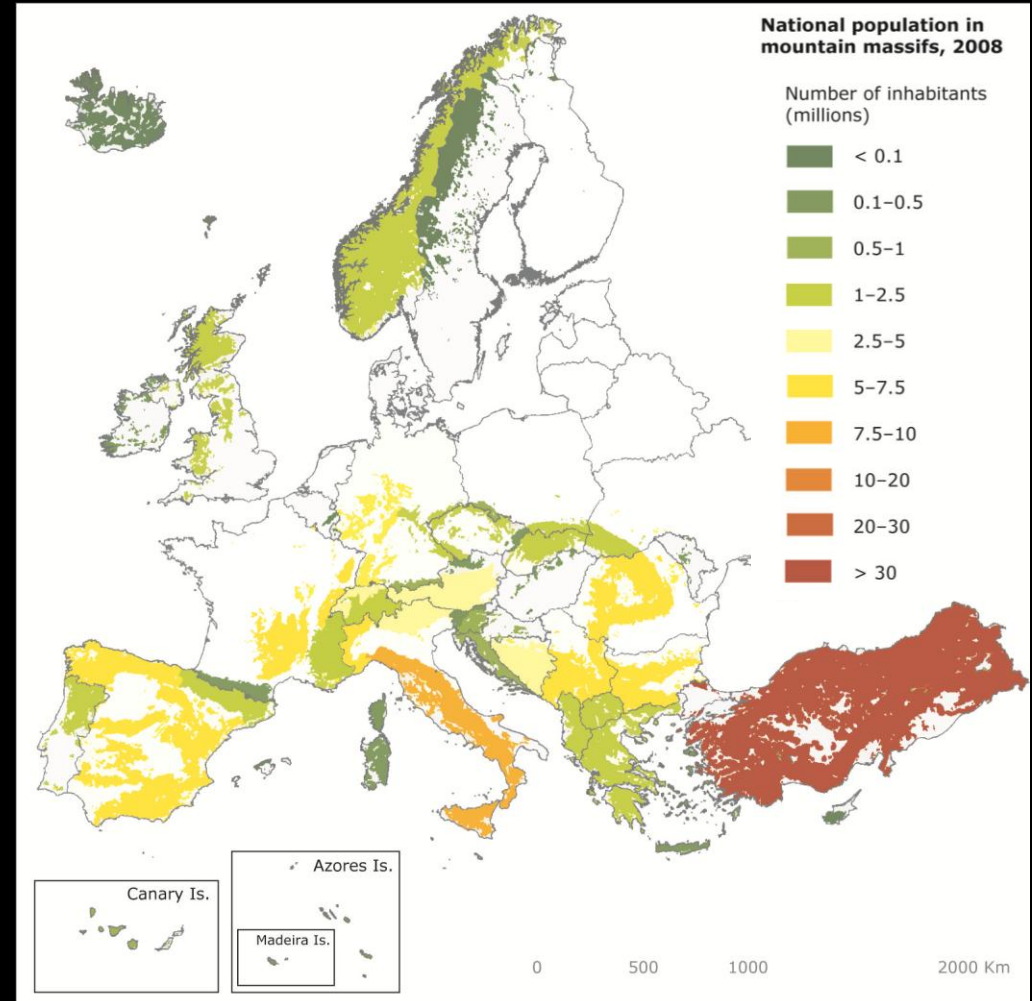
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# Mountains – population unevenly distributed, increasing but also depopulating in certain areas

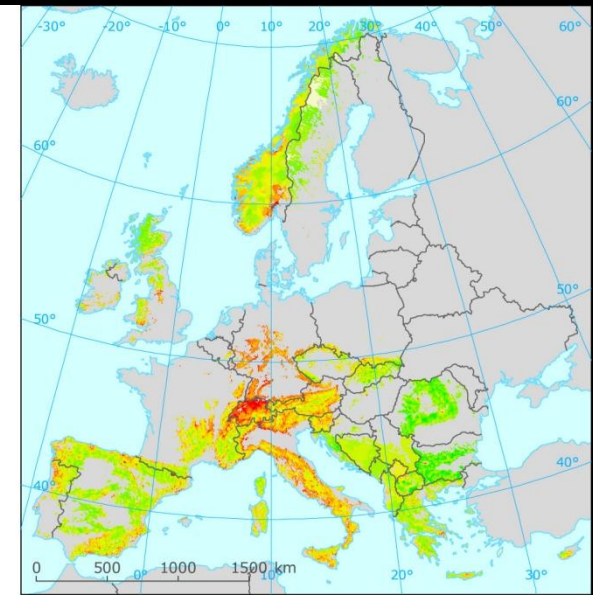
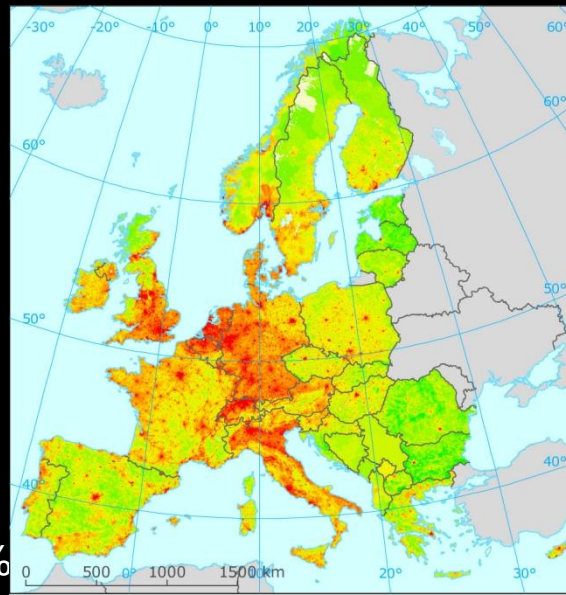
But 118 million people live in mountains (including Turkey) and 10 countries have at least half of their population living in mountains



Mountain economy –  
forestry, agriculture,  
manufacturing and  
services

## Land cover

forest 41 %,  
pasture and mosaic farmland 16 %  
natural grasslands 15 %  
unvegetated open space 14 %



**Economic density in the EU-27 and in mountains areas**

Economic density (KEure)



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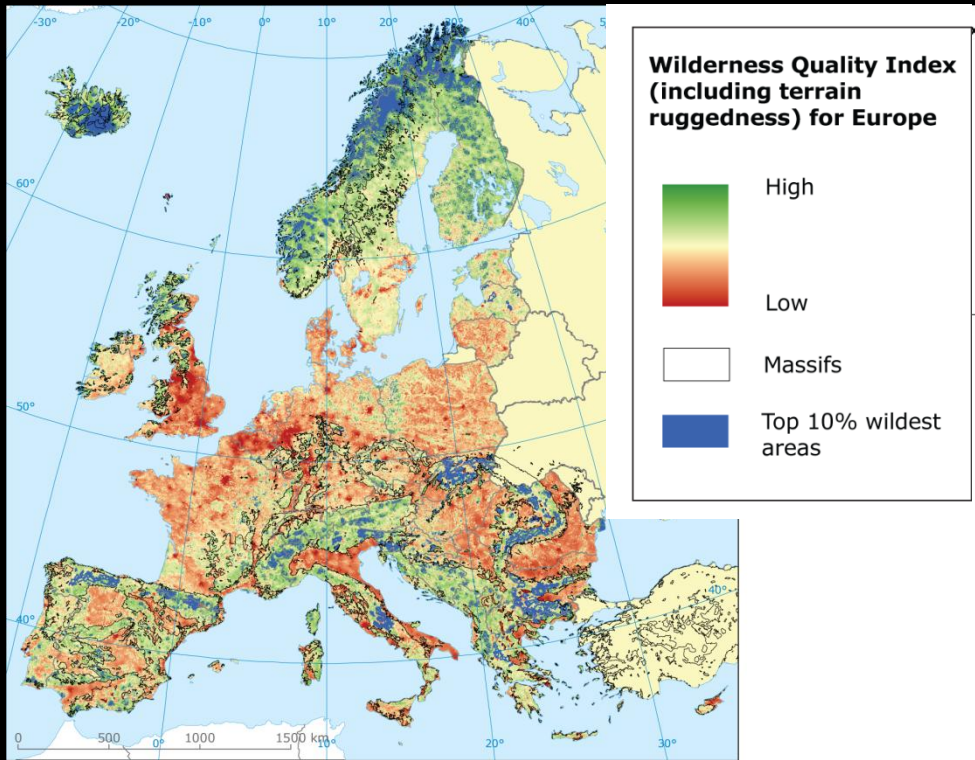
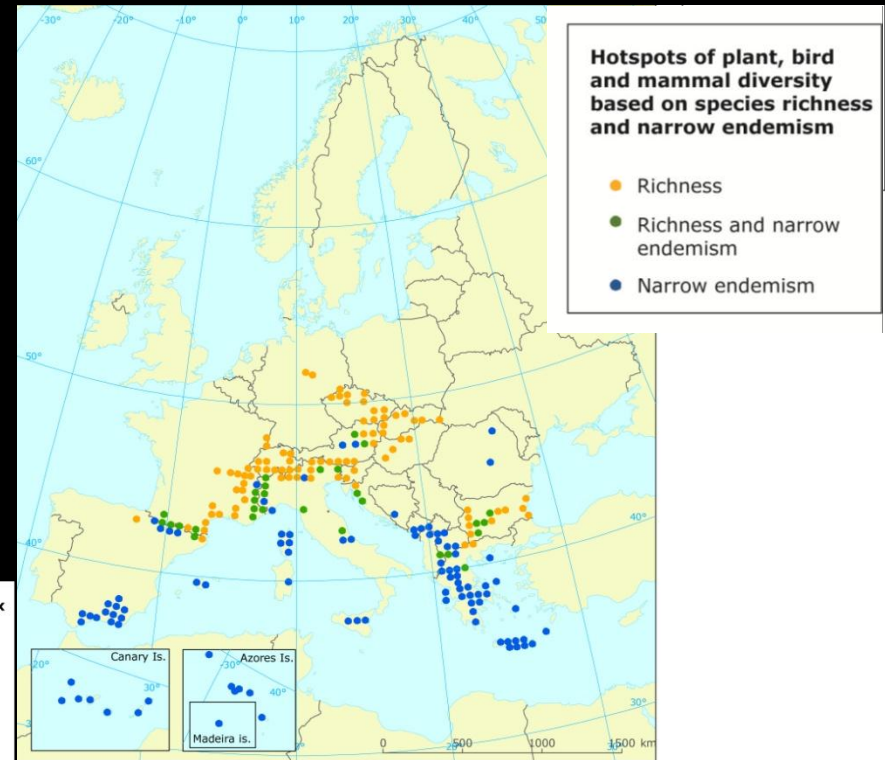
© B. Olah



# Mountains are rich in biodiversity

16 % of Habitats Directive species live exclusively and other 11 % mainly in mountains

18 % of habitat types are linked to mountains, other 39 % occur in mountain areas

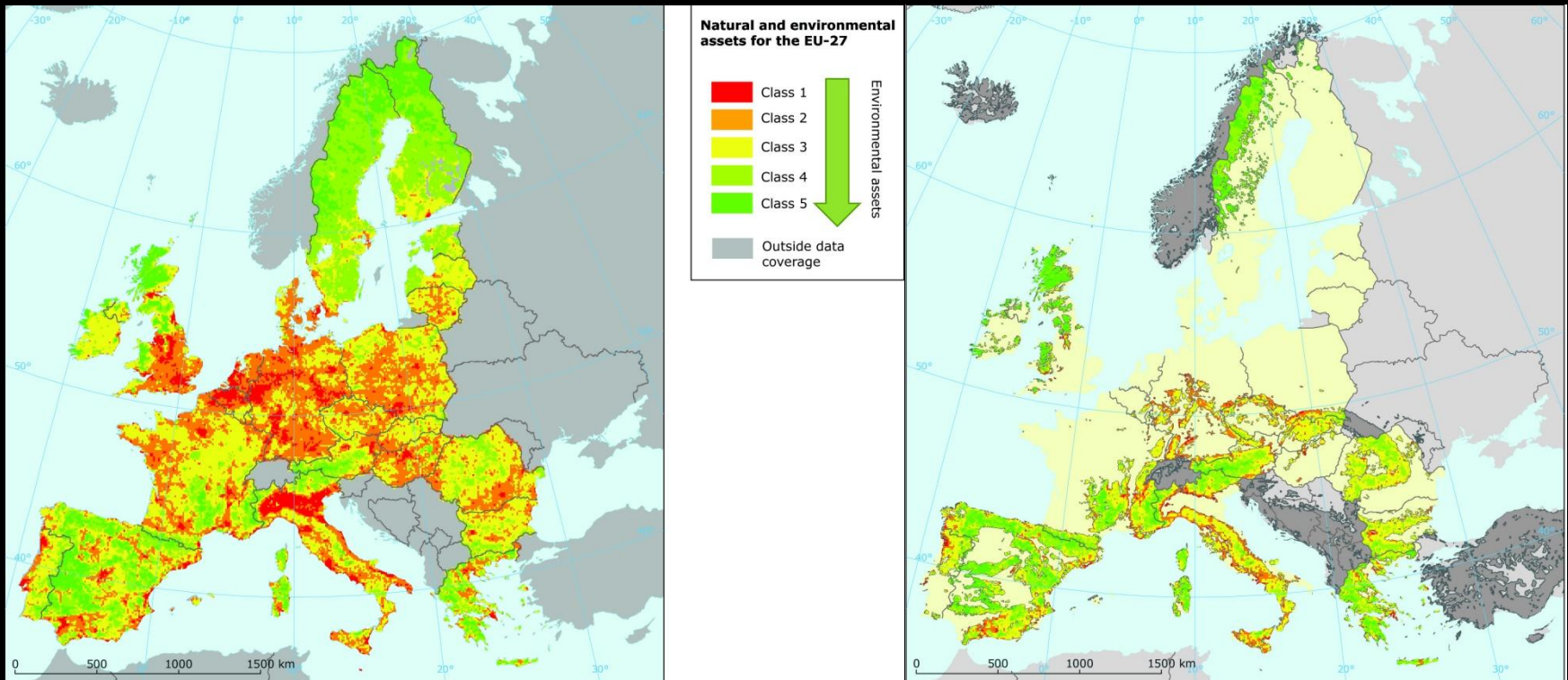


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# Mountains have, on average, better environmental quality than non-mountain areas

Based on economic density and accessibility, HNV farmland, proximity to natural areas, air quality and degree of soil sealing



# Mountains provide essential ecosystem services

Services	Ecosystems	Agro ecosystems	Forests	Grasslands	Heath and scrubs	Wetlands	Lakes and rivers
<b>Provisioning</b>							
Crops/timber		↓	↑			↓	
Livestock		↓	=	=	=	↓	
Wild Foods		=	↓	↓		=	
Wood fuel			=		=		
Capture fisheries						=	=
Aquaculture						↓	↓
Genetic		=	↓	↓	=	=	
Fresh water			↓			↑	↑
<b>Regulating</b>							
Pollination		↑	↓	=			
Climate regulation			↑		=	=	=
Pest regulation		↑		=			
Erosion regulation			=	=	=		
Water regulation			=		↑	↑	=
Water purification						=	=
Hazard regulation						=	=
<b>Cultural</b>							
Recreation		↑	=	↓	↑	↑	=
Aesthetic		↑	=	=	=	↑	=

**Trend between periods**

↑ Positive change between the periods 1950–1990 and 1990 to present

↓ Negative change between the periods 1950–1990 and 1990 to present

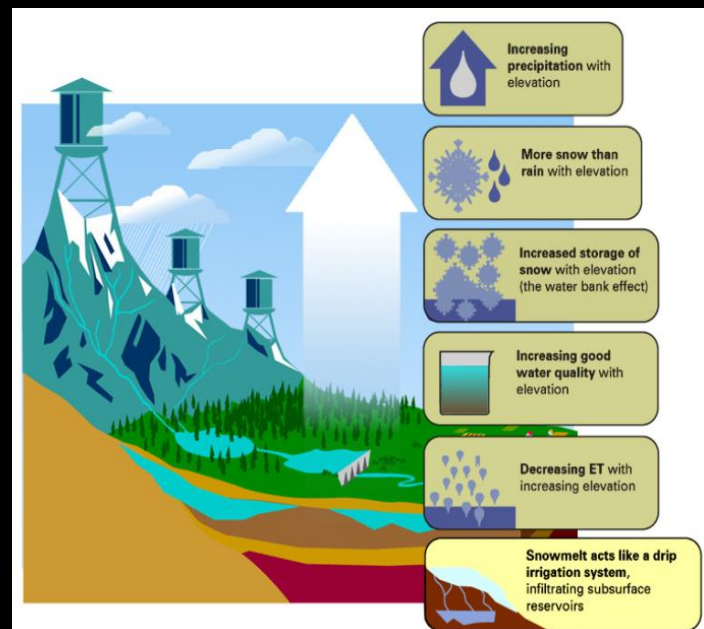
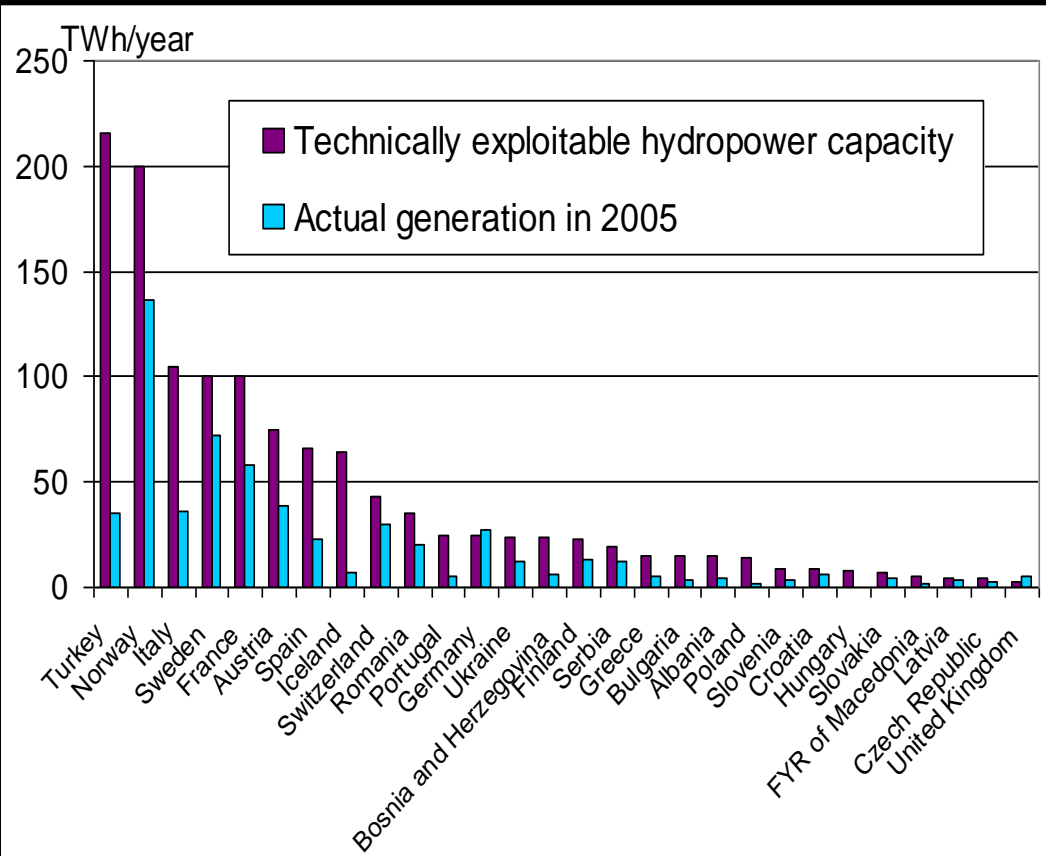
= No change between the two periods

**Status for period 1990–present**    ■ Degraded    ■ Mixed    ■ Enhanced    ■ Unknown     Not applicable

**degrading** - the loss of biodiversity often reduces productivity of ecosystems



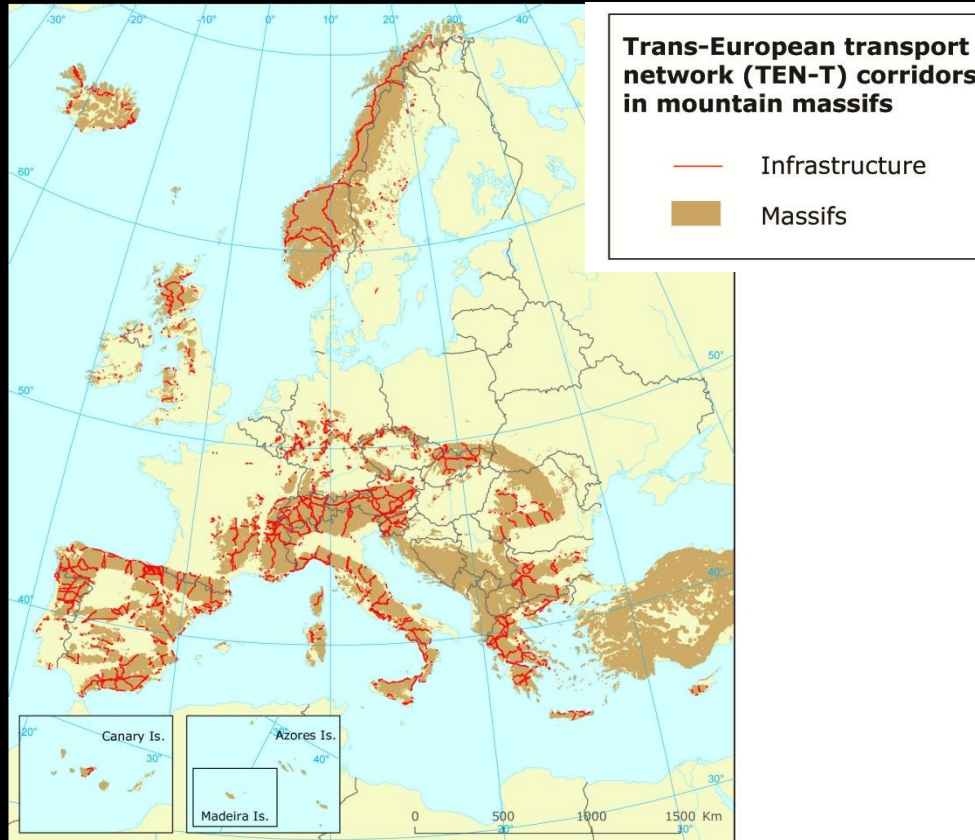
# Mountains are a significant resource of water and renewable energy for whole Europe



# Threads

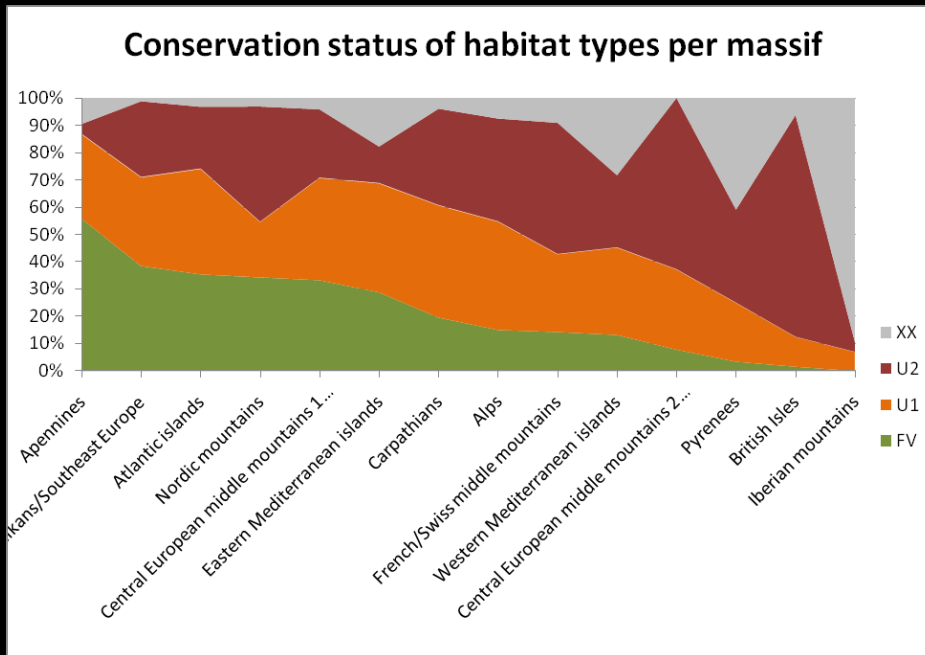
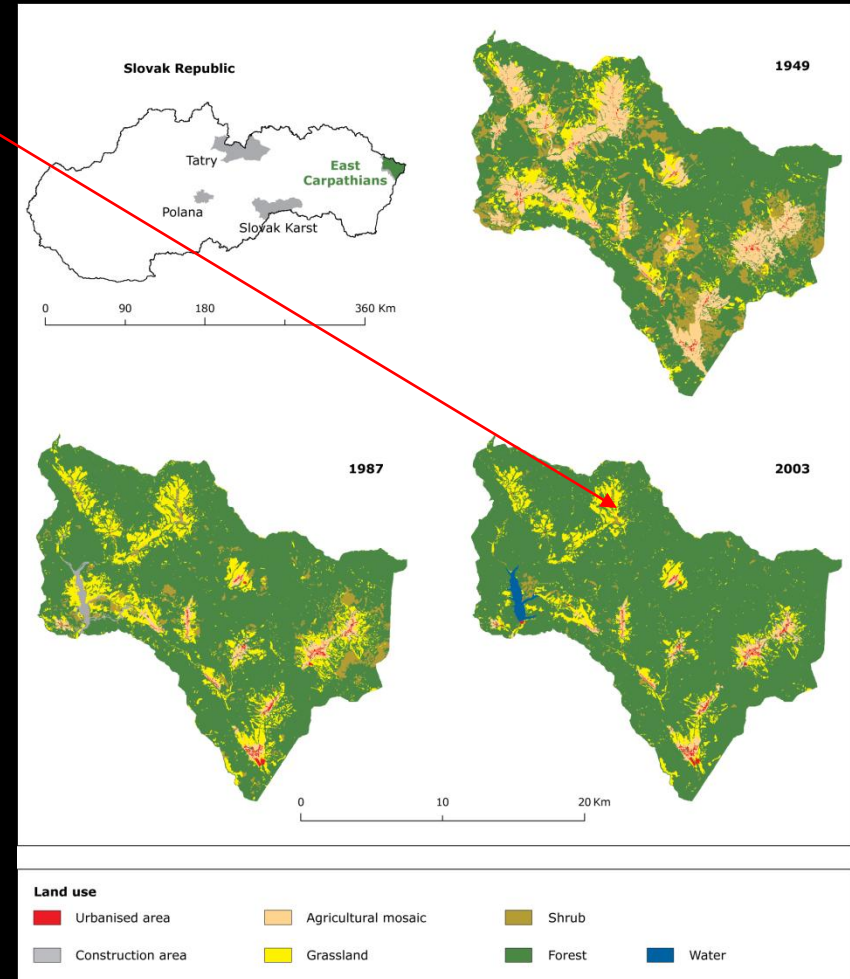
intensifying utilisation (agriculture, forestry, urbanisation, transport - habitat loss, fragmentation)

Up to 10 % of mountain areas is affected by TEN-T corridors and approx. half of mountain populations live within 5 km from those corridors



# Threads

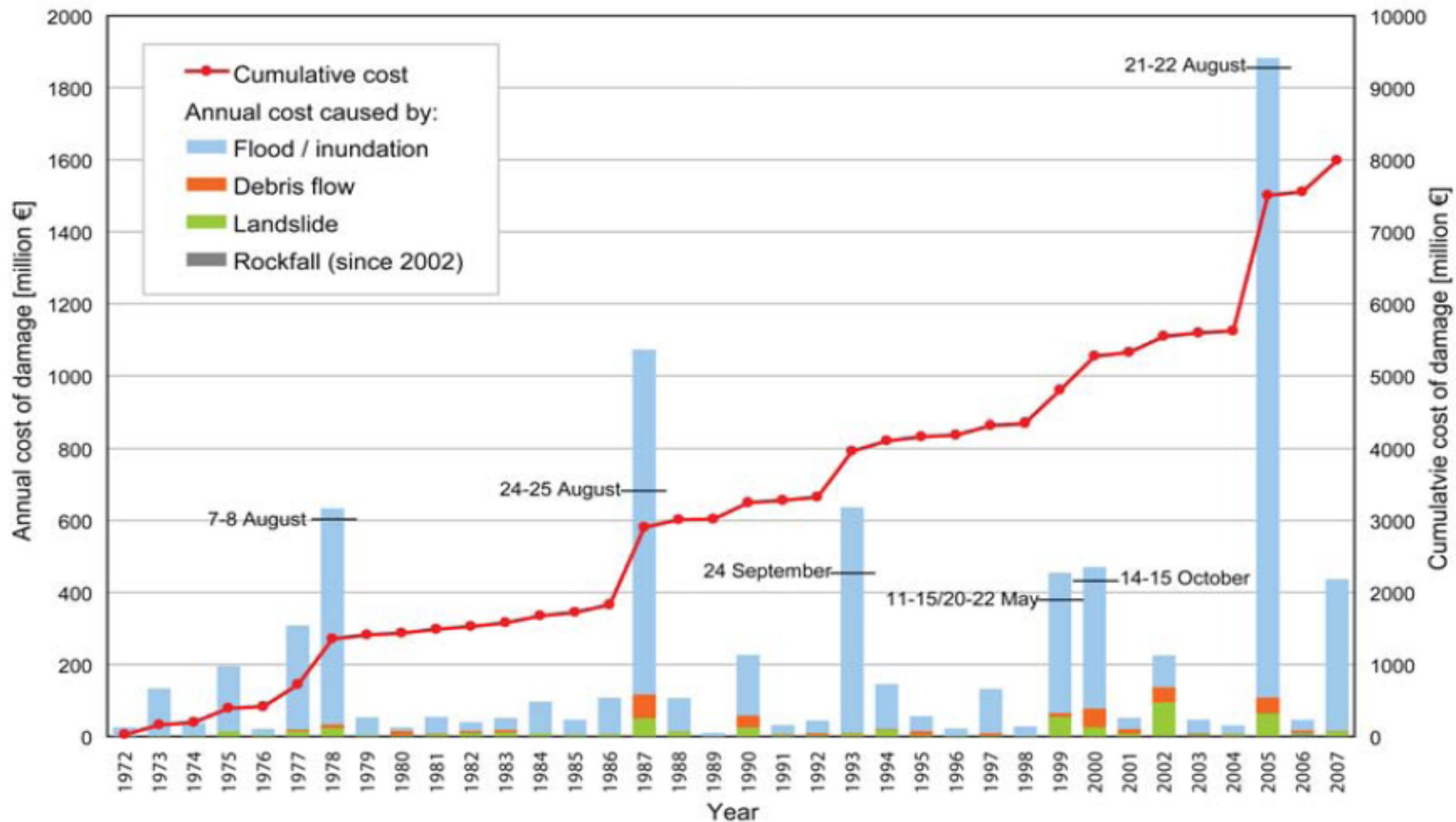
land abandonment (loss of species and ecosystems requiring management)





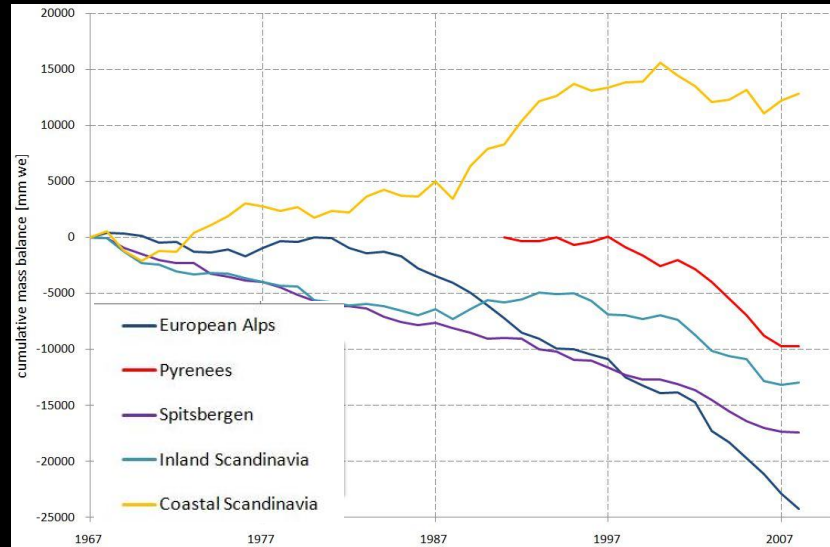
# Threads - climate change (extreme events, higher risk of rock falls and soil erosion, upward shift of biota and risk of extinction)

## *Growing damages and restoration costs*

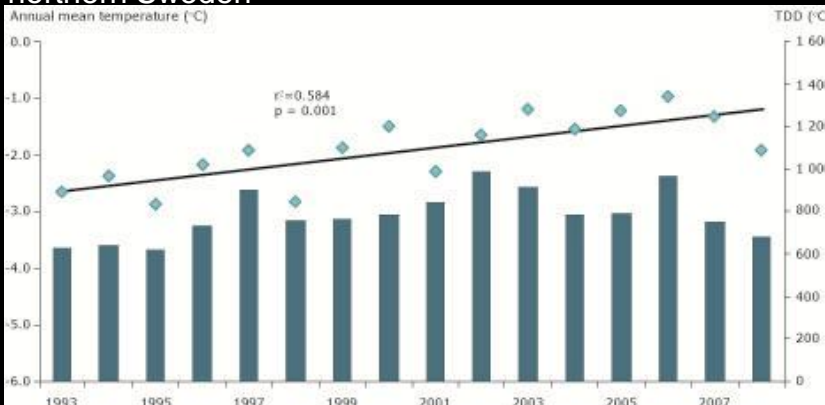


# Threads - climate change (faster change than adaptation capacity, temperature increase, less snow, melting glaciers and permafrost)

Glacier mass balance of European regions, 1967–2008



Temperature sum > 0 °C, from May to Sept. at Latnjajaure, northern Sweden

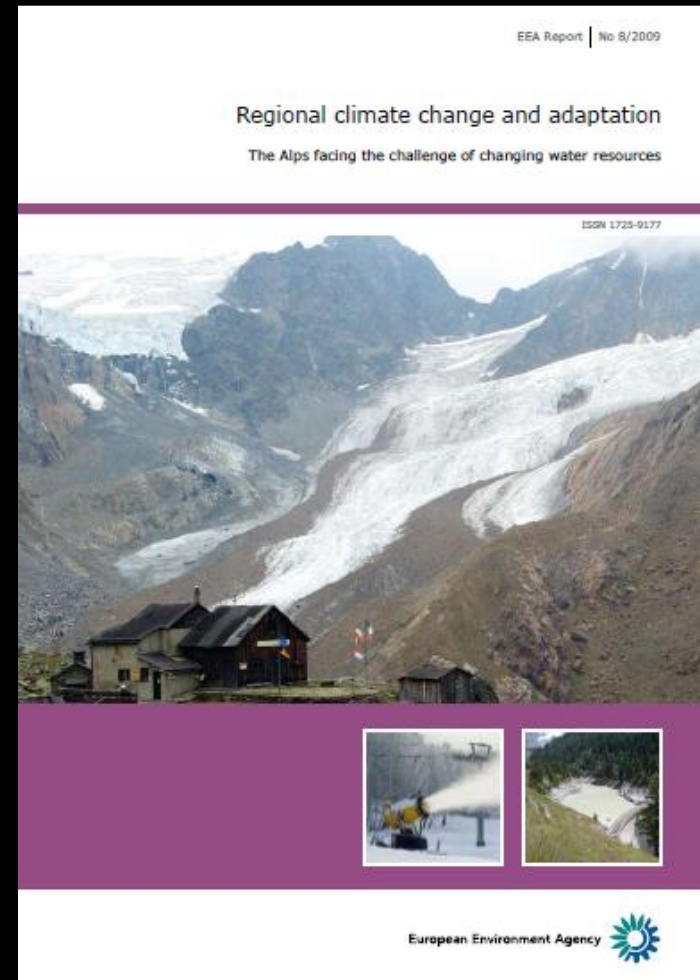


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# Regional climate change and adaptation – The Alps facing the challenge of changing water resources

- How will climate change affect the Alps?
  - How does water supply from the Alps affect Europe?
  - How are sectors influenced by and adapting to changing water availability?
  - What lessons can be learnt from regional case studies?
- 
- Latest climate science findings
  - Cross-sectoral and integrated perspective
  - Case studies-based assessment
  - Transferability of lessons learned



<http://www.eea.europa.eu/publications/alps-climate-change-and-adaptation-2009>



# Costs and benefits of climate-change impacts



Ski seasons are expected to shorten and summer seasons to lengthen in mountain regions



# How to approach innovation?



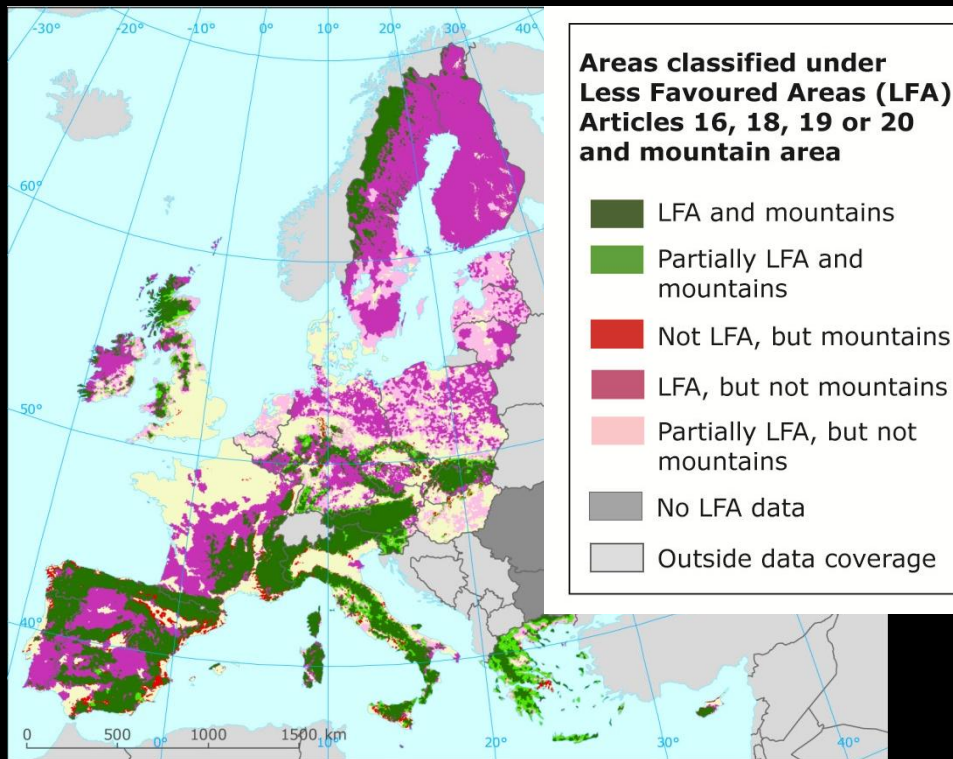
# ...or bring skiing to cities?



Mountains are addressed in various policies but mainly as a part of other sectors - agriculture (RDP, LFA), forestry, nature conservation (nationally designated areas, NATURA 2000) or wider regions - territorial cohesion policies (ERDF, ESF),

92 % of EU mountain area (excl. BG and RO) is classified as LFA

49 % of Natura 2000 area (EU-27) is in mountains



33 % of EU mountain areas is HNV farmland



## Europe's ecological backbone: recognising the true value of our mountains

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Mountain people are more vulnerable as they might lose their very subsistence and living environment

Non mountain people might be threatened indirectly – decrease in provided ecosystem services (water availability, but also floods, mountain recreation)







<http://www.eea.europa.eu>

**Thank you for your attention**

