Caucasus Mountain Forum 2023:
Transdisciplinarity for Sustainable Tourism Development:
Role of Caucasus Scientists

Appreciating mountain values in shifting perceptions for remote places and natural resource maintenance

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Presentation overview

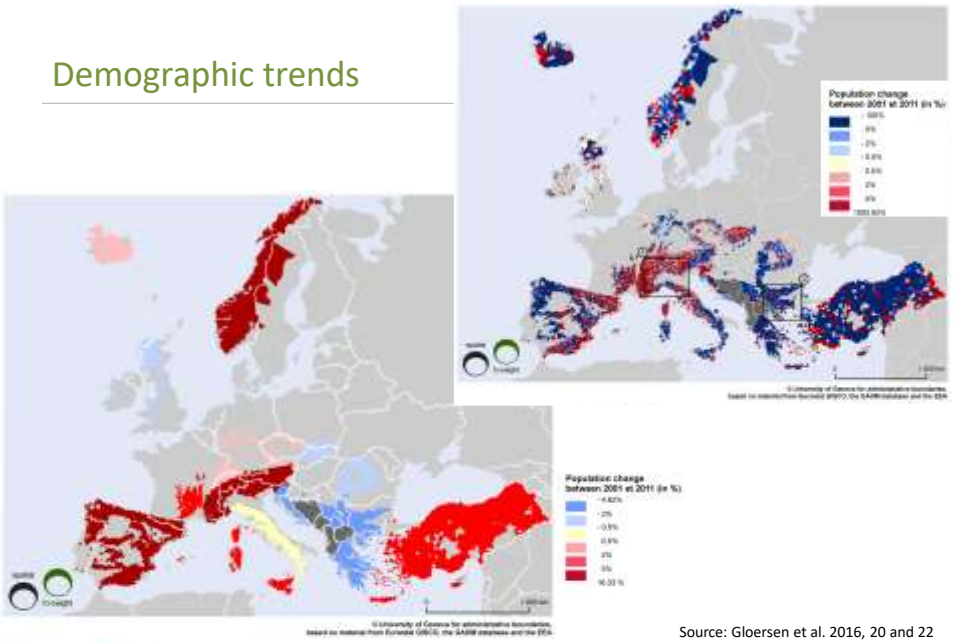
- Assessment of mountain contexts, trends and policies, indicating pressure on mountains
- Major drivers and incentives to transition (examples)
- Policy support and failure
- Need for adaptation/transition towards beneficial narratives, nurturing mountain opportunities
- Key aspects of shifting perspectives – integrating balanced views
- Relevance for Caucasus mountains
- Reassessing mountain values

Mountain contexts, trends and policies

- *Defining mountains* – beyond topography and iconic views
- *Physical environment*
  nature protection, climate change adaptation, land use, low productivity levels, activities linked to local physical context
- *Assessing regional performance*
  Economic development
  mountain farming and forestry; economic profiles varied; diversification processes; tourism options, harness natural resource base, renewable energy potential
  Socio-cultural aspects / „Well-being"
  demographic trends, in- and out-migration, and population movements, second homes, cultural change, quality of life aspects
  Ecology
  protection areas, environmental benefits/loss and securing quality, natural resources availability; biodiversity maintenance; climate change awareness and adaptation
- *Remoteness*
  interrelations, accessibility, low density, dependance, marginalisation …

➡ Challenges and opportunities

Demographic trends



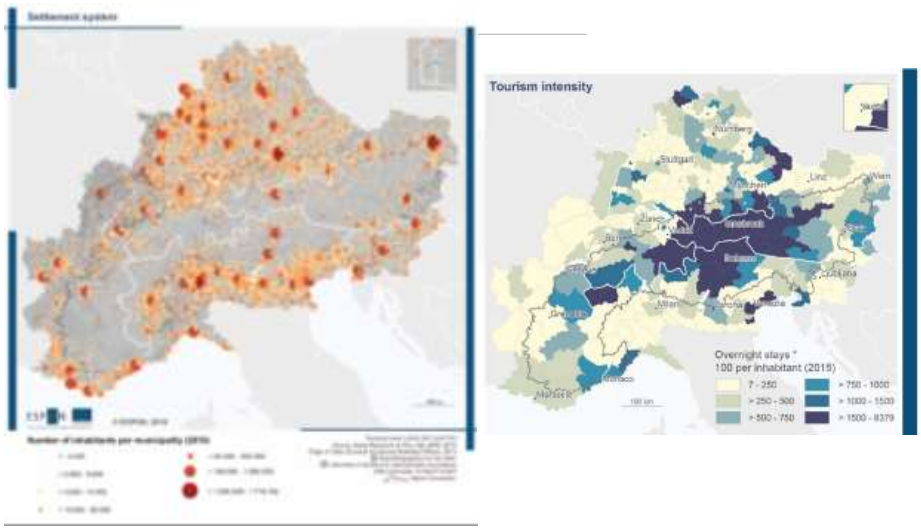
Source: Gloersen et al. 2016, 20 and 22

Public goods provided by mountain land management

Broad Categories of Environmentally and Socially Beneficial Outcomes (ESBOs)	Importance of public goods provided by mountain systems		
	High	Medium	Low
Sustainable production of food, timber and energy		x	
Maintenance of water cycles and quality / air quality	x		
Climate change mitigation (incl. carbon sequestration)	x		
Mitigation of risks and disaster prevention (avalanches, floods, erosion)	x		
Maintenance of soil functionality and soil protection		x	
High levels of biodiversity / and pollination		x	x
Maintenance of characteristic landscapes and cultural heritage	x		
Recreational opportunities and healthy environments	x		
High levels of farm animal welfare			x
Preserving and enhancing rural vitality	x		
Securing intrinsic aesthetic and spriritual values	x		

Source: Dax 2020, p.11;
Nigmann et al. 2018

Mountains – Lowlands Interaction

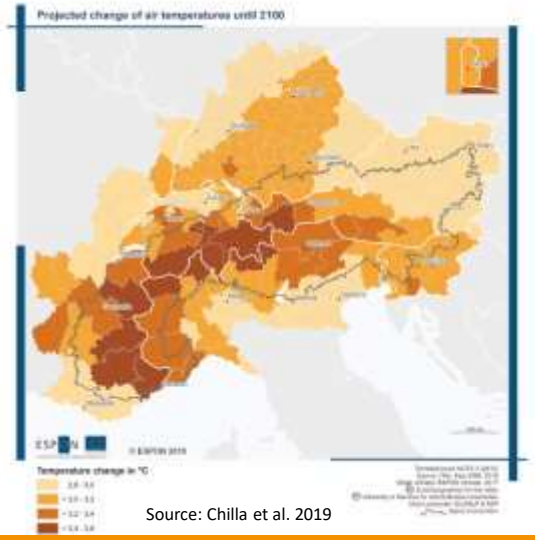


Source: Chilla et al. 2019

Mountains – Lowlands Interaction

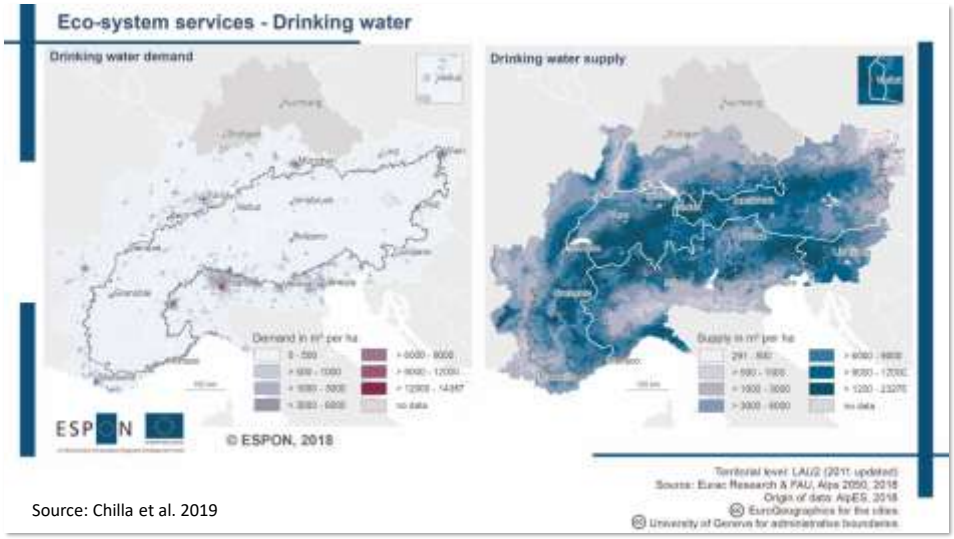
Climate change

- The projected changes of the (air) temperature
  - higher increases in the inner-Alpine areas than in the area of the spaces beyond the mountain topography;
  - In particular, the Southern side of the Alpine mountain range is characterized by the highest changes in annual mean temperature, in particular in the Western part.
  - Climate change adaption comprises measures concerning disaster risk management, touristic adaption strategies, new energy concepts etc.



Source: Chilla et al. 2019

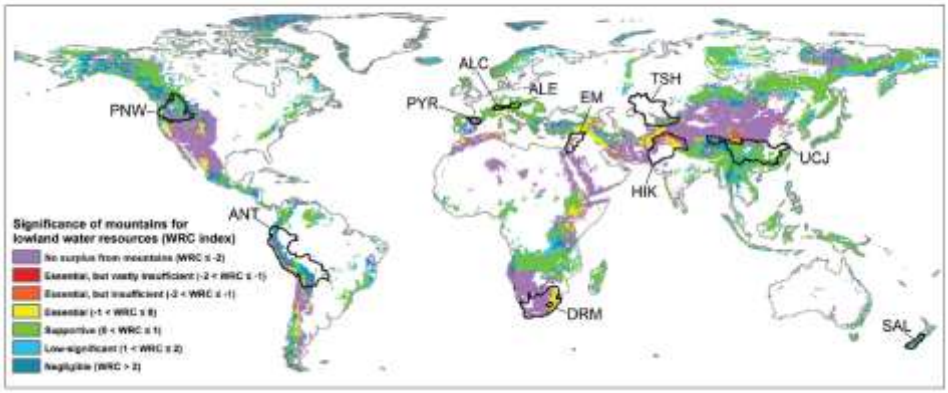
Mountains – Lowlands Interaction



Source: Chilla et al. 2019

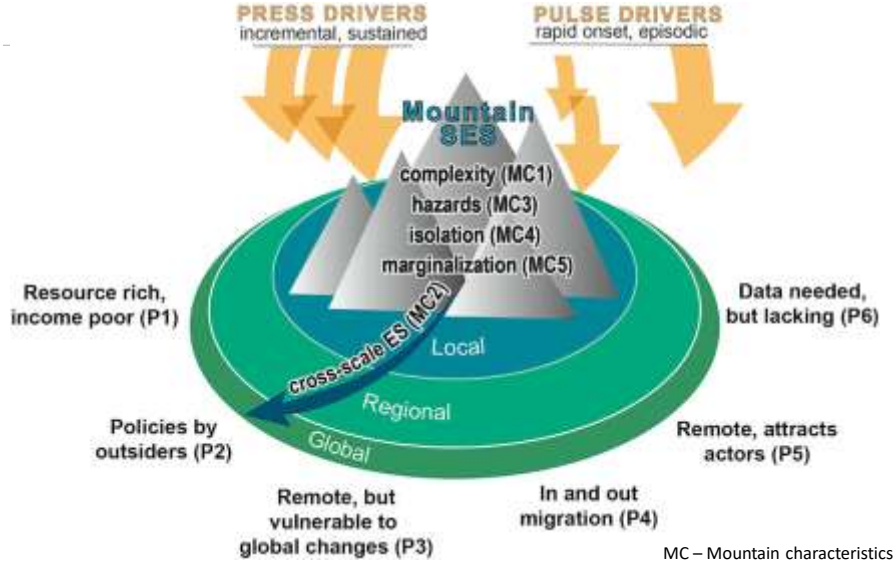
Significance of mountains for lowland water resources

Figure 2. Significance of mountains for lowland water resources (Viviroli *et al.* 2011). ALC = Alps (Central), ALE = Alps (East), ANT = Tropical Andes, DRK = Drakensberg Mountains, EM = East Mediterranean, HIK = Himalaya Karakoram, PNW = Pacific Northwest, PYR = Pyrenees, SAL = Southern Alps, TSH = Tien Shan, UCJ = Upper Changjiang River/Tibetan Plateau.



Source: Egan and Price 2017, 15

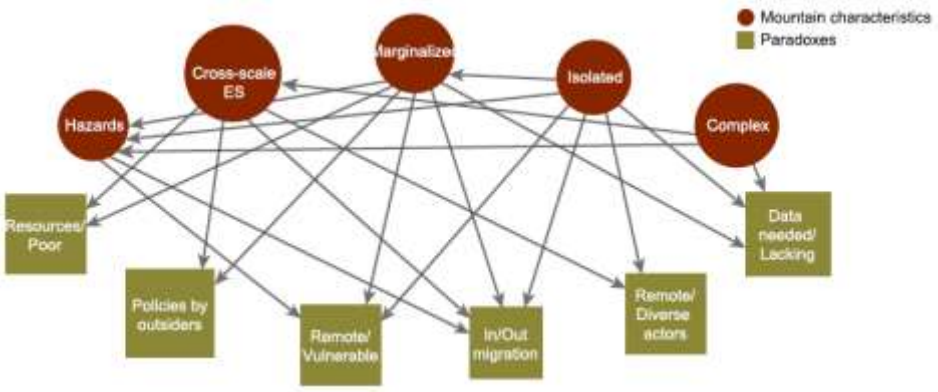
Pressures on mountain socio-ecological systems



MC – Mountain characteristics
P - Paradoxes

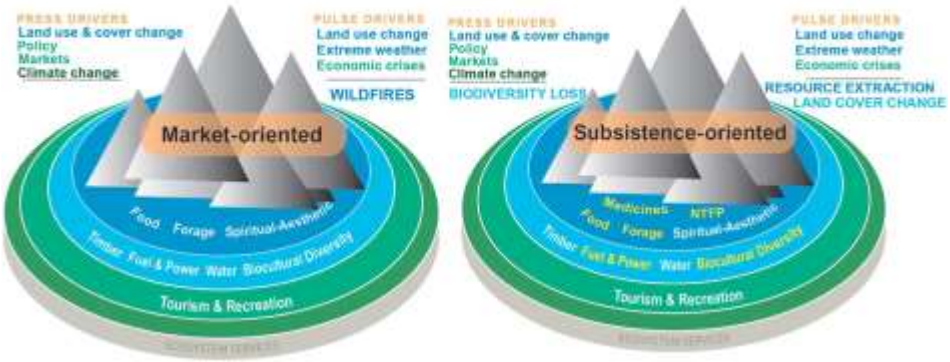
Source: Klein et al. 2019, p. 552

Conceptual network linking mountain characteristics with paradoxes



Source: Klein et al. 2019, p. 553

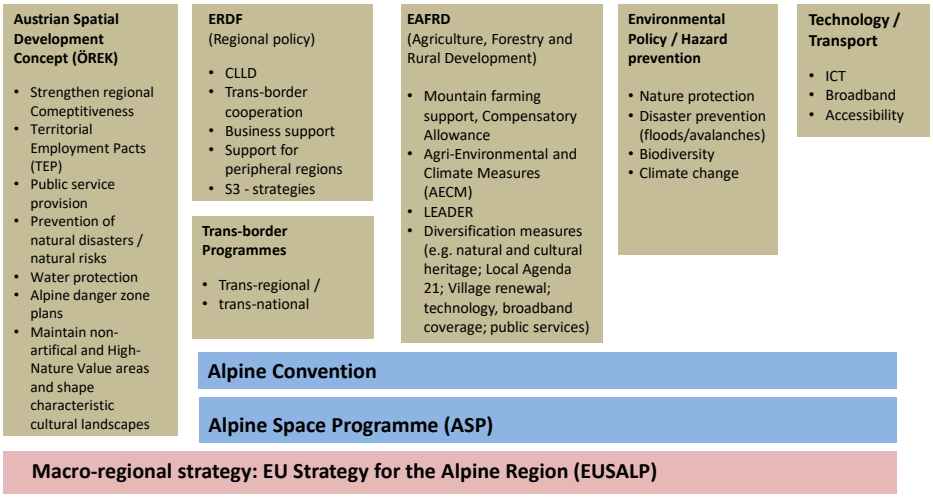
Key cross-scale drivers and ecosystem services



Notes: Drivers significantly more important in the subsistence-based or market-oriented models are presented in CAPITAL letters.
The ES that are significantly more important in subsistence-oriented sites ($p < 0.05$) are in yellow text. (ES = ecosystem services; NTFP = nontimber forest products).

Source: Klein et al. 2019, p. 554

Overview on policy measures for mountain regions of Austria



Overcoming „blind spots“ in mountain regions‘ narratives

- Recognize mountain areas‘ integration in larger territorial/spatial frameworks
- Realize on-going challenges and (emerging) opportunities
- Conceive mountains as places of „unique“ territorial assets, with high sensitivity to changes in intensity of resource use
- Shape amenity features and take place-specific and institutional limitations into account
- Remember: Places of „origin“, specific nature-based resources, foodscapes and landscapes, heritage and local culture display inherent values/core sources of attractiveness
- Respect limitations of (land/resource) use and thresholds

Mountain research strategies / transformation need

Issues	Main shortcomings	orientation
Thematic focus	Fragmentation of analysis and topics („case studies“)	Integrative view of wide scope of themes
Local and regional development	Limited reflection of SES and spatial interrelation; paternalistic views on locals	Overcome limited reliance on local agency; assessing SES and spatial relationships; actual involvement processes
Service provision	Lack of systemic view and place-sensitivity; role of external drivers	Access to and „cost“ of services vs. appreciating mountain specific services
Territorial justice	Path dependency and lock-in to linear policy framework, perpetuating inequality	Overcome „compensating“ view and predominance of technological solutions; enhance social innovation
Grand societal challenges	Climate change impacts and mountain ‚paradoxes‘ neglected	Sustainability needs, address mountain challenges and opportunities, and systemic interrelations
Transformation and knowledge transfer	Fragmentation, conceptual and methodological separation, reduced/biased understanding	Adaptation to spatial context, networking and common learning process
Inter- and trans-disciplinarity	Diciplinary predominance, limited discourse between scientific schools and of spatial impacts	Overcome disciplinary, spatial and conceptual „blindness“; enhance exchange and practical knowledge integration

Source: Dax 2022, 42f.

Main elements of mountain “branding” activities

(1) High relevance of **landscapes**

(2) **Food systems** and leading „regional products“

(3) **Local food production**, processing and marketing

(4) **Local „cuisine“** an increasing pull factor

(5) Strong linkages to **rural tourism** (farm-related, food, restaurants, landscapes, resource base …)

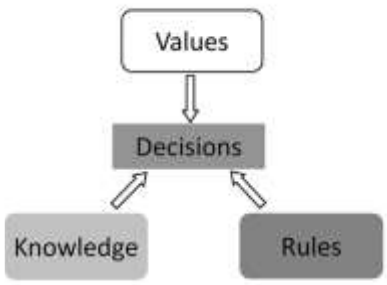
(6) **Cultural** heritage and **natural** heritage

(7) **Place of „origin“,** paradigm shift towards embracing uniqueness of local features

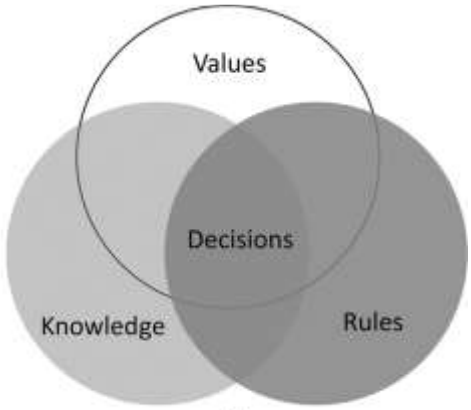
Place-based assessment of mountain values

Criteria	Dimensions / values
Historical use of mountain regions	Colonisation, settlement and productive functions
Cultural heritage	Local/regional cultural achievements
Natural resources	Scope of non-renewable and renewable resources
Ecological sensitivity; biodiversity	Protective role; sentinels for global change (global impact)
Public goods (water, Climate Ch., risk prevention; landscapes, health; rural vitality …)	Provision (internal and external) and connecting to lowlands
Recreation and spiritual values	Attraction, fascination and awe
Open space and experiences	Athmosphere, human-nature relation, reflection

Reasssessing mountain values from a decision-context perspective



(a) Decision-making perspective



(b) Decision-context perspective

Source: Gorddard et al. 2016, 63

Conclusion

- Mountain SES concept illustrative for complex interrelations between actors, resources, governance and actions in a qualitative way
- Need for regional governance in mountains to consider spatial differentiation, stakeholder engagement and policy integration
- Mountain policies to capture local/regional knowledge, interrelations to other areas (lowalnds) and large-scale impacts
- Address mountain assets and shape emerging mountain narratives including wide scope of options and local action
- Elaborate effective pathways for policy diffusion

Scientific Network for the Caucasus Mountain Region

Thanks for listening

SUSTAINABLE CAUCASUS

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