Workshop Output WS 1.1.D

Title of workshop: Climate change in Mountain regions: Bringing together methodologies and knowledge systems

Prepared by

Moderators	*Martina Neuburger (Chair), Julia Klein, Jeffrey McKenzie, Wolfgang Gurgiser*
Participants*	Erdmann, Lorenz, Jurt, Christine, Singer, Katrin, Neuburger, Martina, McKenzie, Jeffrey, McDowell, Graham, Jokinen, Johanna C., Sanseverino, Mary, Singletary, Loretta, Gobiet, Andreas, Samyn, Denis

* Workshop participants that have submitted contributions to the workshop

General questions to please be answered in the workshop reporting

1) What was the focus of the workshop? Methodological issues and advancements or thematic issues (systems knowledge, transformation knowledge, target knowledge). Please check and fill in the matrix in the output section.

Methodological issues and advancements	**Thematic issues**		
	System knowledge	Transformation knowledge	Target Knowledge
Knowledge integration; complementary knowledge systems; interdisciplinary and transdisciplinary research and practice.	SES knowledge Local & indigenous knowledge **Western science and how to bring these in dialogue with another.**	This is a pre-requisite for transformation Also, transformation for how to transform 'traditional' science so it is more societally relevant and stakeholder driven and addresses power dynamics.	Yes!!!!! However, we are a bit confused about this term.

Our Key Question Was: Based on the presentations and your own experiences, **what are the opportunities and challenges for bringing together methodologies and knowledge systems for mountain research and practice** (e.g. interdisciplinary, transdisciplinary, and across data types)?

1) **Which key points were discussed in the workshop as a whole? (This should be more a synthesis and not simply a summary of the key points in each presentation)**

Our session combined 3-minute lightening talks followed by a think/pair/share approach. The outcome of the think/pair/share activity led to the three themes around which we centered the World Café (a-c below). We ended up addressing three areas related to our key question:

(a) Tools and Models for Knowledge Integration and Dialogue
(b) Bringing Local Priorities and Perspectives into Equal Dialogue for Societally-relevant science and practice

(c) Communication to facilitate different ways of knowing, understanding and responding to mountain challenges

2) **What is your opinion on the current state of knowledge concerning your topic(s) (focusing on mountain regions)?** ***Please check and fill in the matrix on the following page.***

(a) Tools and Models for Knowledge Integration and Dialogue

a. Easily accessible, managed, long-term (beyond project funding) databases like Diversitas are a useful tool for sharing scientific knowledge.
b. eScience was an example of a tool for early career students and faculty regarding data mining and sharing tools
c. Photographs, participatory mapping and different types of models are tools that can bring people with different knowledge together; this also builds a sense of place.
d. Citizen science is a method for connecting and engaging science and society worldwide
e. **Bringing results back to community are an essential methodological step that should be funded with the project**.
f. **MOOCs are a great tool** to bring complex problems and issues to general public
g. Facilitation is a critical tool we need to acquire.
h. Social media is a tool to reach stakeholders.

(b) Bringing Local Priorities and Perspectives into Equal Dialogue for Societally-relevant science and practice

a. 'Local' has different meanings and challenges for different people. Local context matters and needs to be described.
b. We should focus on programs, not projects
c. More time on the ground building relationships is important
d. Need to be aware of who is at the table; whose voice is included; need to consider diversity and equality.
e. Diversity means intersectionality, youth
f. Local exchange should include time in both home locations
g. Self-reflection is critical

(c) Communication to facilitate different ways of knowing, understanding and responding to mountain challenges

(a) Use visual representations suitable for the target groups (try to think in their knowledge systems)
(b) Define and share terms and concepts; respect multiple definitions and understandings
(c) Use simple (non-technical) language
(d) Work to maintain motivation and incentives for conducting this type of work
(e) Collaboration instead of consultation – e.g. develop your project together with communities (would need funding)
(f) Joint field trips of scientists from different disciplines, community members, stakeholders
(g) All involved researchers should gain basic competences in multi-epistemic literacy
(h) Connections and contradictions of geostories (stories that refer to the same place) from different scientific (including natural sciences!) and community based perspectives

Overall assessment of the state of:

What is your personal opinion on the current state of knowledge concerning the topic(s) addressed in your workshop. Please tick the appropriate field. Brief explanations are appreciated.

State of knowledge	Very good	Good	Poor	Very poor	Not appropriate	*Comments*
Global		x				
Regional			x			*Which region?*
Scattered case study-based knowledge		x				*Where?*
Knowledge about past states/trends			x			
Knowledge about current situation		x				
Knowledge about future states/trends/thresholds			x			
Knowledge about the system		x				
Knowledge about shaping pathways to more sustainable development (transformation knowledge)					x	
Knowledge about envisaged goals (target knowledge)				x		

1. <u>Ideas for questions to potentially be answered by the moderators after the workshop in the reporting (please delete what is not useful):</u>
2. Were there any new insights and/or findings presented? If yes, which ones?
3. What was the main message/consensus of your workshop?
4. Were major uncertainty issues identified and discussed? If yes, which ones?
5. Was there any significant controversy (if so, what?) that requires new data (or further exploration of existing data) to resolve the issue? (explain)
6. Were new research questions raised? If yes, would working on these questions need to involve other disciplines (which ones)?
7. Did the workshop identify research topics (e.g. environmental drivers other than climate) that are, in your opinion, currently greatly underrepresented in mountain research, but should urgently be addressed?

Further Comments