

Workshop Output WS 1.4.A

Title of workshop: Mining the mountains – impact on environment and human societies.

Prepared by

Moderators	Gert Goldenberg & Peter Tropper
Participants*	Peter Trebsche, Hans Reschreiter & Kerstin Kovarik, Valentina Coia, Rouven Turck (canceled on grounds of ill health), Wolfgang Knierzinger & Michael Wagreich (canceled on grounds of ill health)

* 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
Mineralogy and petrography of alpine geo-resources / mining archaeology and mining history / interpreting archaeo-materials with interdisciplinary studies / reconstruction of the development of technologies, alpine landscapes and human societies connected to mineral exploitation in the past			

- 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)
- Influence of mining and metallurgy on societies and environment in the past
 - Investigation of (prehistoric/historic) mining camps and settlements with an interdisciplinary approach (sedimentology, archaeo-botany, archaeo-zoology ...)
 - Quantitative approaches (production, subsistence, population ...) based on experimental work and computer modelling
 - Analogies between prehistoric and historic mining activities (archaeological and archaeometrical information / written historical sources / modern knowledge)
 - Comparison of (human) genomic data to identify or not an “alpine cultural group”, indicated by the archaeological evidence for the Copper Age, Bronze Age and Iron Age
 - Understanding of the demographic events/evolution in the European prehistory, especially in the Alps

- Explication of the monopoly position of the salt mines at Hallstatt from the Neolithic to the Early Iron Age – why?
- Development of independent and unique mining technics and tool equipment connected to the prehistoric salt mining at Hallstatt
- Phenomenon of little to no knowledge transfer between copper mining and salt mining districts as well as between different salt mines – why?

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.*

This question is very difficult to be answered, because the state of knowledge for the topics of the workshop depends very much on the region where investigations are undertaken as well as on the expertise of the institutions involved. So the state of knowledge can be very good to not appropriate. In the case of Tyrol and Salzburg the knowledge on prehistoric copper and salt production can be considered as very good to good, compared to many other regions in a more global scale.

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						
Regional						
Scattered case study-based knowledge						
Knowledge about past states/trends						
Knowledge about current situation						
Knowledge about future states/trends/thresholds						
Knowledge about the system						
Knowledge about shaping pathways to more sustainable development (transformation knowledge)						
Knowledge about envisaged goals (target knowledge)						

Ideas for questions to potentially be answered by the moderators after the workshop in the reporting (please delete what is not useful):

- 1) Were there any new insights and/or findings presented? If yes, which ones?
- 2) What was the main message/consensus of your workshop?
- 3) Were major uncertainty issues identified and discussed? If yes, which ones?
- 4) Was there any significant controversy (if so, what?) that requires new data (or further exploration of existing data) to resolve the issue? (explain)
- 5) Were new research questions raised? If yes, would working on these questions need to involve other disciplines (which ones)?
- 6) 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