

# Social Network Analysis in the Context of Cross-Border Climate Change Adaptation

## The Case of Tourism in the Oberalp Region



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### Background: The ClimAlpTour Project

The European territorial cooperation project ClimAlpTour – Climate Change and its impact on tourism in the Alpine Space is devoted to climate change adaptation in tourism contexts. The main base-line objective of the project is to help destination to shift towards all-season offers and to increase resilience of the local tourism systems towards climate change effects, such as lacking snow. Overall, 17 institution from 6 alpine countries took part, working together with 20 pilot sites.



The research consortia of the Alpine Space ClimAlpTour project, grouped by location of the respective organizations in the six Alpine countries

### The Case Study Area

- Designated HTW pilot site was the Upper Surselva Valley, which encompasses the municipalities Sumvitg, Medel (Lucmagn) Disentis/Mustér, Tujetsch in the Canton of Grisons
- Additionally, due to the dynamics around the creation of the Andermatt Swiss Alps resort and the extension of the skiing area on the Oberalp Pass the municipality of Andermatt (UR) was integrated into the sample
- Main identified barrier to climate change adaptation in the region: a lack of cooperation between various (tourism) actors
- First step to overcome lacking cooperation: depiction of the current state of interaction between tourism actors with help of a social network analysis

### The SNA in the Oberalp Region

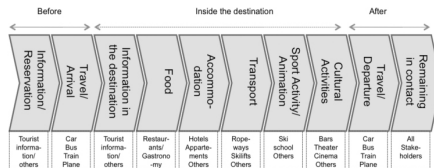
Social network analysis (SNA, Wassermann & Faust 1994) is used a method to identify the strength of vertical and horizontal links between actors in a certain region or economic sector. SNA as a methodological tool has been shown to contribute to a better understanding of the role of vertical and horizontal stakeholder integration by revealing communication flows between actors (Ingold et al. 2010, Ernstson et al. 2010), e.g. in the context climate change adaptation (Adger 2003).

The social network analysis conducted was based on the tourism service chain approach. All relevant actors were identified with help of the local tourism bureaus. Thereupon, all tourism actors from the five municipalities received the questionnaire, and all who did not answer within two months were called up directly by telephone in order to encourage them to return the questionnaire.

Final participation rate 42%; N (overall) = 170

### Complete Network

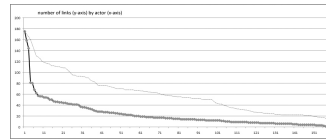
Complete network of the Gotthard region tourism supply chain in three main municipalities Andermatt, Disentis and Sedrun (including the small villages Sumvitg and Medel), and regional actors (locations indicated by colour). The size of the actors indicates their betweenness centrality, the shapes indicate the six supply chain sectors plus public actors.



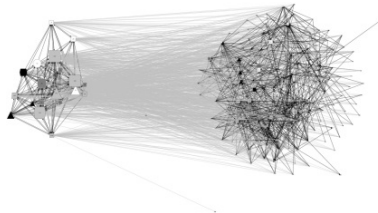
Supply chain "Mountain Experience" and integrated stakeholders (Luthe 2009, adopted from Michel, 2001)

### Network Centrality

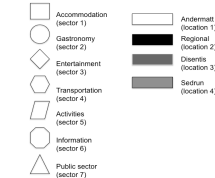
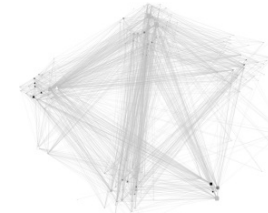
Actors are shown on the horizontal axis and the number of links on the vertical axis. The thick dotted line shows the distribution of links per actor. In comparison, an example for a less centralized network is indicated by the thin dotted line where actors share connections more evenly.



Separation of the twenty most central actors with the black ties only in between them (left side) and the remaining 139 actors with the ties in only in between them as well in black (right side). Grey ties in the middle connect both sub-networks.



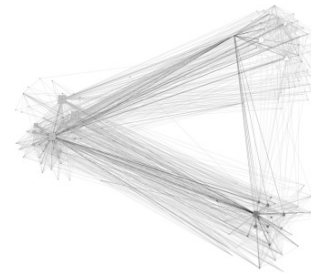
### Network by Sectors



The Gotthard tourism network with the six service supply chain sectors and the public sector manually separated, but without spatial separation. On 0/360° in the graph is the hotel sector, clockwise following sectors 2-7.

### Regionalized Network

The Gotthard tourism supply chain network separated by the three locations Andermatt (upper right), Disentis (lower right), Sedrun (upper left). Grey lines indicate all ties between actors, black lines indicate ego-networks of the three cableways in the three municipalities.



### Main Recommendations

- A better integration between Andermatt and Disentis across all sectors of the tourism supply chain is desirable, in order to foster regional cooperation in the wake of climate change
- The gastronomy sector should become more integrated both in Andermatt and Sedrun, since gastronomy generates a high portion of revenue in the tourism supply chain and gastronomy is an essential part of the overall tourism offer
- The network is very dense without any clearly identifiable subgroups – this can be a problem when it comes to innovation and the implementation of novel ideas, e.g. for climate adaptation. Therefore such a process should be actively encouraged in the region.

### Further Steps

A qualitative evaluation with actors of high, medium and low centrality will complement the SNA. Such a validation and evaluation process will provide further insights into the quality and strength of the ties. Further on, in the context of fostering cross-municipal cooperation in tourism, a bottom-up innovation process under the lead of Progetto San Gottardo shall commence in 2012, partially based on the results of the SNA presented here.

### Contact

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