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Climate change and winter tourism – a stakeholders' perspective in the Tyrol Region

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Abstract

Due to their present focus on snow-based winter tourism many Alpine destinations will be facing challenges posed by modifications of current temperature and precipitation patterns. It has been the aim of the study to obtain insights into the risk appraisal of climate change among stakeholders in winter tourism and the present significance of climate change in risk management in Tyrol. The study uses a qualitative approach with guide-lined in-depth expert interviews. About a third of all Tyrolean tourism region CEOs and the CEOs of the corresponding cable car companies were included in the sample. The results show that at this stage climate change is not perceived as a substantial threat and thus not a driving force in risk management so far.

Keywords: climate change, winter tourism, risk appraisal, risk management, Tyrol, Austria

1 Introduction

Most forms of winter tourism in the European Alps in general and in some parts of Austria in particular show a strong focus on snow and Alpine winter sports. Its dependency on natural resources makes winter tourism one of those economic segments most affected by the impacts of climate change (Abegg et al. 2007; Scott et al. 2007; Becken & Hay 2007). Current strategies involve iterative technical adaptation processes in the main. The production of machine-made snow and the extension of operations to higher altitudes seem to be regarded as universal remedy in many Alpine destinations. Most stakeholders are firm believers in the effectiveness of already implemented and planned measures (Mayer 2007; Wolfsegger 2008).

Climate change and winter tourism have been a topic of research in many mountain regions worldwide. The respective studies comprise investigations assessing the impact of climate change on winter tourism in Canada (Scott et al. 2007), the USA (Scott & Dawson 2007, Scott et al. 2008), Japan (Fukushima et al. 2003), Australia (Hennessy et al. 2008), Sweden (Moen & Fredman 2007), Germany (Abegg et al. 2007; Steiger 2007), Switzerland (Abegg 1996; Abegg et al. 2007), Italy (Abegg et al. 2007), France (Abegg et al. 2007) and Austria (Abegg et al. 2007; Breiling et al. 1997; Breiling et al. 2008; Mayer et al. 2007; Steiger & Mayer 2008; Steiger 2010).

The number of relevant studies focussing on the perception of climate change among stakeholders in winter tourism on the supply side is considerably smaller. In the European Alps perception analyses have been undertaken in Switzerland by Abegg (1996) and Abegg et al. (2008), in Austria by Wolfsegger et al. (2008) and Strobl et al. (2011) and in Germany by Roth et al. (2008), while Luthe (2009) con-

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ducted a transnational study including some ski areas in France, Italy, Austria and Switzerland.

Due to the different study designs and the specific differences between the study areas in general those results are significant only to a limited extent for Tyrol. So far no detailed climate change perception analysis has been carried out in the research area. A comprehensive picture of the subjective risk assessment concerning climate change and winter tourism in Tyrol has been missing so far. The study at hand aims at bridging that gap.

The investigations are conducted at the Institute of Geography of the University of Innsbruck in the course of the project "Sustainability of Ski tourism in Tyrol and South Tyrol" which is financed by the Austrian Science Fund. Due to the combination of physical, economic and social science research methods the project shows a strong interdisciplinary character. Together with further project results the empirical findings of the perception analysis are supposed to support the setup of a sustainable, pro-active risk management in relation to climate change and winter tourism in Tyrol.

2 Study area

Tyrol has a dominating position in the Austrian tourism industry. The province situated in the western part of the country generates about 40% of Austria's turnover in tourism and holds one third of bed places. The significance of tourism compared to other economic sectors varies regionally. The average contribution of tourism to the Tyrolean GDP is 16% with considerably higher values on a district level. Especially in some valleys such as the Pitztal, Oetztal and Paznaun tourism is of existential significance with high ratios of employees up to 67% (http://www.presse.tirol.at/xxl/de/tourismus-zahlen/ (accessed: 04/06/2011)).

3 Methods

In a qualitative approach guide-lined in-depth expert interviews were conducted. A guided interview is a qualitative method of empirical social research with a guideline in the sense of a topical pre-structure (Meuser & Nagel 1997). Before the interview certain topic areas are pre-defined and open and semi-open questions are pre-formulated to narrow down the scope of the interview. The guideline has to be designed on the basis of profound theoretical and empirical knowledge and thus requires field competence on the part of the interviewer (Fribertshäuser 1997). According to the individual topic areas the interviewees are asked about their subjective appraisals and experience. The guideline is to be handled flexibly and not in the sense of a rigid, standardised procedure considering also the requirement of openness, one of the merits of qualitative research (Meuser & Nagel 1997; Mayer 2008).

Expert interviews are a special form of guideline-based interviews. The interviewees are relevant due to their function as experts in a certain field of action. They

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are included in the study as representatives of a group and not as individual cases (Mayer 2008). When conducting the sampling, the organisational structures, allocation of competences and decision-making processes in the specific field of action have to be taken into account (Mayer 2008; Meuser & Nagel 1997).

About a third (n = 11 out of 36) of all Tyrolean tourism region CEOs and the CEOs of the corresponding cable car companies (n = 13) were included in the sample. The selected representatives know the specific regional conditions and share the inside experience of their stakeholder group. The interviews lasted up to 90 minutes and were carried out between March and August 2010. The topic areas covered in the interviews were *destination positioning*, *market trends*, *perception of climate change* and *strategic planning*. Several pre-test interviews were conducted to exclude or specify initially problematic, too complex or incomprehensible questions.

The comparability of expert interviews is possible due to the common institutional and organisational context of the experts and the guideline-based procedure (Meuser & Nagel 1997). The interviews were analysed using a multi-stage coding process by Meuser & Nagel (1991) including transcription, paraphrasing, coding, topical comparison, sociological conceptualisation and theoretical generalisation. The evaluation was supported by the text analysis software of MAXQDA.

4 Results

In the following a general picture of climate change risk appraisal in Tyrolean ski resorts is outlined. When presenting the main findings several statements by interviewees will be referred to in brackets, see Table 1.

All stakeholders have already been involved with the topic of climate change in their everyday work to a varying extent. The context of communication with markets and the banking industry in the sense of relativising the problem was mentioned by far the most often (Statement 1), while the contexts of capital budgeting, investments and ecological aspects are of minor importance. Only two out of 24 stakeholders state that climate change is already part of their risk management.

The interviews revealed a strong feeling of distrust among stakeholders in the climate projections (Statement 2) and a lack of communication of scientific results to the tourism industry. Hardly any stakeholders have already observed changes in their regions that would affect the tourism industry apart from receding glaciers or melting permafrost. Some reported that snow and coldness might be more characteristic of spring than they used to be and that perhaps more stormy days could be identified but they had doubts whether these were real trends in their regions.

Asked for expected changes in the future the interviewees generally believe in a global warming trend and also acknowledge the possibility of a higher occurrence of extreme weather events in terms of coldness, snow, rain and stormy days in the next 20 years.

The CEOs of tourism regions and cable car companies were also requested to assess the likelihood and consequences of several events in their region within the next 10 years. Temperatures too high for producing snow (Statement 3) as well as

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Table 1: Statements by CEOs of tourism regions and cable car companies (survey in the Tyrol region in 2010).

Statement 1	*"We try to relativize, to state that snow-deficient winters have always been and will occur again and again and show that we have taken precautions in the form of snow production. The worst part about all this was the banking industry that made use of altitudinal limits of snow reliability in their risk assessments. That was really dangerous."* (CEO, cable car company)
Statement 2	*"We are confronted with the jostling between opinions and conflicting opinions. A few years ago they said that we would have less snow, we had a lot of snow and they told us this was an exceptional case. We had five exceptional cases in a row. They also said it would become warmer and then we had a freezing cold winter. This doesn't increase our trust in studies. We can't evaluate the long-term effects of climate change with the results we have been given so far."* (CEO, cable car company)
Statement 3	*"We can control a warming of 1 °C, even 1.5 °C with the snow making facilities without chemical additives. Here the snow production techniques grow with the problem. If we consider a warming of 2 °C then, if you will pardon my saying so, we will have other problems globally than whether skiing is still possible in the Alps. Above 2 °C winter tourism and climate change is a question of luxury."* (CEO, cable car company)
Statement 4	*"In fact we don't need snow, we make snow. Too much natural snow is bad for our business because it means higher costs for the preparation. The skiers only complain about natural snow pists, they want smooth slopes which we can only provide with the help of machine-made snow. It sounds absurd but the best scenario for us is less natural snow, cold temperatures for the snow production and lots of sun."* (CEO, cable car company)
Statement 5	*"It would be presumptuous to say that the ski areas have taken precautions against climate change because we haven't, we are not prepared. […] Snow production may be a main strategy but a strategy against a lack of snow, not against climate change. We have not taken any real precautionary measures against a marked warming trend yet."* (CEO, tourism region)
Statement 6	*"As far as increases in the summer season are concerned, there are limits. In summer we sell nature, silence and relaxation. Even if we get 30,000 hikers or mountain bikers in the area that's not manageable. For us summer can be a nice extra income but it can't – to no extent – alleviate big problems in winter. We have ideas how to cushion but definitely no idea how to solve a real problem with ski tourism."* (CEO, cable car company)
Statement 7	*"We have considered this matter but the price-performance ratio isn't worthwhile. The insurance rates are too high throughout. At the moment the risk is still foreseeable."* (CEO, cable car company)
Statement 8	*"We used to discuss cost splittings but finally we came to the conclusion that we don't want others to share the costs because then they want to have a say in snow making. For now and in the next few years the expenses must be covered by operational activities."* (CEO, cable car company)
Statement 9	*"There are no alternatives to skiing so far. We need intelligent, innovative products and specialisation but there is little progress so far. We [Tyrol] ought to become pioneers in environmental management but we don't get enough political support in climate protection. The stakeholders and politicians are too short-term focussed."* (CEO, tourism region)

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damage by extreme weather events are ranked among those risks with a possible likelihood and catastrophic consequences, while the lack of natural snow is assessed as a risk with only insignificant to moderate consequences due to the success of machine-made snow (Statement 4).

In general the stakeholders keep quite calm about climate change and its effects on the Tyrolean winter tourism industry. They think they won't be affected badly or have already taken precautions against climate change. The main focus currently lies on iterative technical adaptation processes with the aim of maintaining services as they are, whereas strategic adaptation processes are still lacking behind. Only very few critical comments – mainly by the CEOs of tourism regions – could be identified concerning the effectiveness of machine-made snow as an adaptation strategy to climate change (Statement 5). At this stage various improvements in snow production often referred to as "snow-management" seem to be seen as universal remedy.

In the field of behavioural adaptation cooperatives and mergers with other areas, more focus on the service quality and improvements of the media work are given preference in facing future challenges in winter tourism including climate change. All-year-tourism and increases in the summer season are not seen as potential sheet anchors in case of real problems should arise in ski tourism due to climate change (Statement 6).

Two more recurring managerial adaptation strategies were discussed with the CEOs of the cable car companies: cost splitting in snow production and the significance of weather derivatives and snow insurances. None of them proved to be a serious way of facing climate change. The CEOs classify snow insurances only a sensible tool for protecting single outdoor events but not a whole winter season due to current price-performance ratios (Statement 7). Although some of the CEOs could generally imagine cost splitting in snow production – e. g. with the accommodation industry as one of the main profiteers of machine-made snow – they do not really believe in the enforceability of this measure and expect even more problems (Statement 8).

Mitigative strategies are still in their infancy. Those few stakeholders who already think of mitigation complain about the lack of political support in Austria and Tyrol (Statement 9).

In all these considerations climate change still plays a subordinate role and is not a driving force in risk management so far. In one respect the stakeholders find themselves unanimous, namely in the opinion that an alternative to snow-based winter tourism with a comparable mass impact cannot be identified at this stage. One interviewee even referred to ski tourism as having been "the cast of fortune of the century for Tyrol".

The reasons why managers don't take climate change into account are manifold. The fact that the periods of amortisations of investments in ski tourism are below ten years leads to short planning cycles. So from a business point of view it might be quite legitimate not to focus on climate change impacts expected for the 2050s to 2080s. A profound discussion of possible consequences is also hampered by the insufficient transfer of scientific knowledge to practitioners in tourism and the presently largely lacking level of economic suffering experienced by cable car companies

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and tourism regions. Moreover, being in a competitive environment also seems to somehow force the stakeholders to show calculated optimism as the following statement expressly underlines: "If we acknowledged problems due to climate change we are pegged as prophets of doom and fouling our own nest. So even if we already faced problems, I doubt that these would be discussed offensively for the time being" (CEO, cable car company).

5 Conclusion

Preliminary findings in the research field of climate change and winter tourism suggest that changes of current temperature and precipitation patterns are likely to have potentially far-reaching effects on the competitive balance of Alpine destinations. Thus, a good understanding of current climate influences is essential for the tourist industry in order to cope with the challenge of climate change. In Tyrol winter tourism is one of the key economic sectors, particularly in the rural areas of the Austrian province. It was the aim of this study to gain insight into the climate change risk appraisal in the Tyrolean winter tourism industry.

Despite distinct indications of an urgent need for action based on the results of impact studies, the stakeholders' subjective risk appraisal appears to be quite relaxed in the main. Climate change is not perceived as a major threat by the interviewees for the next decades. The results of the perception analysis indicate three internal factors that presently restrict a profound discussion of possible effects of climate change on winter tourism in Tyrol: the short planning cycles, the insufficient transfer of scientific knowledge to practitioners in tourism and the presently largely lacking level of economic suffering in Tyrolean winter tourism.

The results of the study at hand suggest that communicating the findings of climate change impact studies on winter tourism to stakeholders is needed right at the outset of a profound risk management. Otherwise those responsible are likely to continue to refrain from establishing and routinely implementing risk management tools taking into account climate change.

Effective and sustainable strategies will definitely have to be beyond the scope of current adaptation measures focussing on technical improvements for maintaining the status-quo and will demand new, innovative concepts. These may range from implementing new forms of tourism on the one end to developing exit strategies from snow-based tourism on the other hand. In the case of destinations facing a positive future competition situation in ski tourism it will be essential to exploit the full potential of drop-out destinations at best.

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