



The importance of artificial snow for winter tourism in the Swiss alps

D. Gallati

Swiss federal research institute for forest, snow and landscape (WSL), Switzerland

(david.gallati@freesurf.ch / Phone: +41-44-7392525)

Climate change will have a wide impact on Alpine tourism. Winter tourism, in particular, will be affected gravely as it has been showed for example in the winter of 2006/2007 when the turnover of the Swiss cable car branch declined by 5 percent due to poor snow conditions¹. However, the winter of 2006/2007 was one of the warmest winter ever measured in Switzerland since the beginning of weather recording in the year 1864². According to the Intergovernmental Panel on Climate Change (IPCC) there will be an increase of temperature of 1.4° to 5.8° C within the next century.³ A future temperature rise of 4°C will move the line of snow-reliable areas from the recent height of 1200m to approximately 1800m in the Central Alps and up to 2100m in the Southern Alps⁴. The demand for technical snow and alternative leisure activities will increase. Technical snow-making is already an important strategy in the Alps in order to adapt better to climate conditions and seasonal weather variability as well as to guarantee snow-reliability.

When assessing the profitability and sustainability of the very cost-intensive technical snow-making, the following questions must be considered: What is the impact of snow-making on winter tourism from the guests' perspective? How important is snow-reliability and technical snow-making for the attractiveness of a destination? These

¹Seilbahnen Schweiz, 2007

²Meteo Schweiz, 2007

³IPCC, 2001

⁴Abegg et al., 2007

questions have been empirically studied using a standardized oral interview, questioning holiday guests in three Swiss skiing destinations: Davos, Scuol and Braunwald. The results of the interview show broad spatial and seasonal differences.

The guests' requirements for the skiing infrastructure are very demanding in Davos and Scuol. There is a broad acceptance of technical snow-making as an adaptation to warmer climate conditions and a guarantee for snow-reliability in these two destinations, at least during the winter season. In contrast, technical snow-making is accepted only by a minority in Braunwald. From the guest's point of view, snow-reliability is of major importance, but is neither the only nor the crucial factor affecting the attractiveness of a destination, nor does it constitute the central motif for the choice of a certain destination. More important factors are for example the skiing region, the landscape, the habit of journey or certain leisure activities. The majority of guests are aware of the impact of climate change on skiing tourism. More than 50 percent of the interviewed persons expect heavy impacts before the year 2020.

The future demand for winter sports depends on changing climatic conditions as well as on enhancing needs and social developments. The rising border of snow-reliable areas requires the evasion to higher situated skiing destinations and the shift to a more diversified supply.