

## **Developing sustainable tourism in sensitive mountain areas Challenges for the sustainable management of leisure motivated mobility in the UNESCO world heritage site of the Dolomites**

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### **Keywords**

Sustainable Tourism, Leisure Mobility, Management, Mountain areas, UNESCO

### **Abstract**

Since 2009 the nine sites of the Italian mountain range of the Dolomites are part of the Natural World Heritage List of the UNESCO due to being widely accepted as among the most attractive mountain landscapes in the world. Yet, as already declared in the evaluation by the International Union for Conservation of Nature (IUCN), this landscape attractiveness has led to significant tourist flows directed to some specific destinations within the area.

The poster presents selected results of a research project, during which a strategy for sustainable tourism in the UNESCO Dolomites is developed. Linked to the diverging dynamics of tourist flows, also the status-quo for road and rail transport in the world heritage area faces the similar problem of a very heterogeneous development and distribution. However, the environmental effects especially by road traffic are myriad and contrary to the idea of protected areas.

The World Heritage Site of the Dolomites faces an interprovincial reality of a serial mountainous site, since the nine component sites forming the heritage area are located on five different provinces, which are part of three Italian regions. The poster illustrates the main challenges for stakeholders in managing and creating a consistent mobility system against this background. The poster identifies three areas as main challenges for stakeholders: the availability of consistent data, the management of road traffic and the public transport offered.

One future main challenge is to provide harmonized data on the traffic development for all five provinces to achieve a common base for the consistent analysis of past and present transport situation in the area. During the analysis none of the requested indicators on road and rail traffic, air pollutant and greenhouse gas emissions could be retrieved from each of the five provinces. As lowest common denominator for the road at least the annual average daily traffic could be retrieved for three of the five provinces of which two could provide disaggregate data sufficient for a more in-depth analysis. This is mostly due to the fact that monitoring of road traffic and its effects is primarily accomplished in more densely populated areas. This fact also indicates how much attention is currently paid to leisure-related traffic in some areas, which so far are not considered hotspots of traffic development.

The values for road traffic volume for most areas of the Dolomites significantly are below values registered for other more densely populated areas outside the mountains, where leisure-motivated traffic is overlaid e.g. by long-distance and commuter traffic. Then again, the average daily traffic counted in summer season score numbers (up to 6.000 vehicles/day) similar to other parts in the area not serving for leisure motivated traffic only.

Furthermore these peaks reflect e.g. arrivals and departures of tourists in their destination, and the traffic towards the access points. It therefore often concentrates in small time segments, where for instance on mountain passes more than 700 vehicles per hour are counted. This development is worrying since these values currently undergo constant growth over the last five years. Even more when we see that several road segments of local and regional importance cross the buffer and core zone of the world heritage site. Reducing these specific peaks is a major aspect for leisure-oriented traffic management in the area.

On the other hand the poster depicts the inconsistent development for public transport offered in the area as a major topic for the future, nonetheless to go against the issues arising from road traffic. The results of the analysis of public transport in the area primarily show a fragmented offer with differing service levels for each province; a fact mainly due to few services oriented towards leisure-traffic (e.g. on Sundays) towards the access points of the Dolomites in the single provinces. The more, it is challenging for the management to achieve a commonly organized public transport offer between the five provinces. So far each province autonomously organizes its own public transport, only marginally considering connections towards the neighboring province. This situation results in a fragmented network of little basic service with only few trans-provincial connections. This situation one the one hand becomes manifest in the fact that transfer to buses of the other province at the provincial border are very rarely coordinated. Furthermore no common tickets to simplify trips across the provincial borders in the area of the Dolomites are available. At last, so far no common information system on all public transport lines exists for the area, possibly joining the different offers of public transport on road and rail.

Summing up, the poster identifies the main challenges for stakeholders the UNESCO world heritage site of the Dolomites in the reduction of leisure-related road traffic on several hotspots on the one hand and in the creation of a harmonized interprovincial offer on public transport (tickets, timetables, connections). It outlines the stakeholders' responsibilities in coping with different dynamics in order to guarantee a sustainable development in the area, for example when public bodies have to unify the aforementioned fundamental elements. The poster shortly outlines strategies developed for the world heritage site to overcome these challenges for organizing leisure-related traffic in a classical dual strategy. It therefore proposes a mix of short-, medium and long-term push- and pull-measures to render individual road transport less attractive on the one hand and pull-measures on the other which are to foster environmentally friendly transport systems.

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