



EUROPEAN UNION



EU MISSIONS

ADAPTATION TO CLIMATE CHANGE



October 2025

Adapting Ski Tourism to tomorrow's climate conditions in France

The Saint Pierre de Chartreuse ski resorts in Auvergne-Rhône-Alpes are improving their resilience to warmer temperatures

Climate change is making it harder for mid-mountain ski resorts to stay profitable. Understanding the key challenges helps communities and local authorities find new, sustainable ways to keep mountain tourism thriving.

Key Learnings

- **Participative and inclusive approach:** Involving citizens from the very beginning in the transition process of a ski resort fosters transparency and takes different stakeholder visions and perceptions into account. It means organising this participatory process with clear leadership.
- **Sharing strengths and vulnerabilities:** Assessing strengths and vulnerabilities of the ski resort in the given context and dynamics, together with sharing the outcomes with all stakeholders and citizens, enables gathering the essential knowledge for informed decision-making for adapting to future requirements.
- **Building a specific transition pathway** relies on repeated evaluations and re-examinations within a structured sustainability framework.

About the region

The Saint Pierre de Chartreuse/Le Planolet ski resort is located in the Chartreuse in the Auvergne-Rhône-Alpes region's nature park. St Pierre de Chartreuse/Le Planolet is a medium-sized ski resort, built at the beginning of the 20th century with 26 ski slopes and 14 cable cars, corresponding to the maximum size of the ski area. It starts at an altitude of 900 meters and peaks at 1,789 meters, making it a mid-mountain ski resort. The resort is located in the Chartreuse Massif near the urban areas of Grenoble and Chambéry.

Climate Hazards

Ice and Snow

Sector

Tourism

Key system

Local Economic System



Climate Threats

Climate change is severely affecting mid-mountain ski resorts, as snowfall has dropped significantly over the past 15 years, resulting in poor skiing conditions and a negative impact on winter tourism. The ski resort, located in the Chartreuse massif and a protected area (see Figure 1), has two snowmaking machines, but considering the negative environmental impact and future climate change projects, artificial snow production is not a feasible replacement for natural snow and has high running costs.



Figure 1: Localisation of the St Pierre de Chartreuse in the Coeur de Chartreuse intercommunality, Image Credit: AURG, 2019.

Stakeholder engagement to identify strengths and vulnerabilities

Successive winters with poor snowfall and the high cost of operating the ski area have pushed the local community to come together and look for solutions. In response, stakeholders relying on ski tourism, such as ski schools, municipalities supporting the ski area and the intercommunity Coeur de Chartreuse, which is responsible for the ski area management, formed an association to manage and run the ski area this season and, if conditions allow, in future seasons as well. However, this arrangement is complicated by the fact that participating municipalities remain individually responsible for repaying loans, which has sparked controversy within the community. At the same time, the State is leveraging various financial

support schemes to position the area as a testing ground for innovative and exemplary transition strategies.

To enable the development of tailor-made solutions for the ski resort, an analysis of past and present socio-economic and environmental situations formed the basis for discussing potential adaptation pathways. In January 2024, 130 gathered at a movie theatre (Figure 2) to follow a presentation about the ski resort's historic and present development, its role for the region's tourism and challenges that tourism operators and public authorities, but also inhabitants, need to consider for future planning. Sharing the outcomes of the analysis allowed drawing forward-looking scenarios to maintain tourism in the area and adapt the sector to the effects of climate change. Discussions with the audience underlined the importance of quantitative data such as information about the snow cover projections and their impacts, the social and demographic evolutions (with new inhabitants for whom the ski resort is not a crucial point), the latest global scientific knowledge about the development of ski tourism in mid-mountain areas and adaptation options, and local experiences, which require further exploration. Questions about the local water situation and the role of forests in the region emerged. The citizen assembly also touched upon the importance of visions for the area, as well as the involvement of the next generation, arts and culture.



Figure 2: Presentation of the Ski resort's Diagnostic in St Pierre d'Entremont Image Credit: TranStat, 2024

The [TranStat](#) project team, which analysed the ski resort's situation, identified several vulnerabilities towards climate change in Saint Pierre de Chartreuse/Le Planolet ski resort. Saint Pierre de Chartreuse ski resort is already experiencing worse snow conditions, expected to continue, especially up until 2035, leading to more winters with poor or inconsistent snow cover. The deterioration in snow conditions, combined with inappropriate investments in ski lifts in the 1980s, explains the lack of economic profitability and the debt of the local authority. These factors have created strong tensions in the region about the future of the ski area, with people holding very different and conflicting opinions.

To tackle this situation and enable long-term climate change adaptation, various local authorities initiated a consultation process in 2020, in which TranStat's team was included and contributed i) by sharing the diagnostic of the ski resort and area's dynamic, ii) by organizing a participatory design fiction workshop named "What scenarios for La Chartreuse at +4 degrees in 2050?" and also, iii) by surveying residents to gather their views on the future of the resort, tourism and, more broadly, the region.

The participatory process involved different groups to think about the resort's future:

- A "coordination group", including public actors and the ski resort manager, set the guidelines.

- A “support group” of around twenty people, including public actors, socio-economic actors (ski-lift managers, real estate owners, ski equipment rental companies, inhabitants).
- A “general public” group, representing local citizens.

This participative approach included three working stages:

1. Reducing the size of the ski area with two operational sites: one site with five ski lifts at Planolet, operated by an association, and one site with five ski lifts at Les Essarts, operated by a private operator, each running for five years. At the same time, there is an ongoing process of dismantling unusable gondolas and lifts to reduce municipalities’ debts.
2. Evaluating the resort’s tourist offers both within the resort itself and in the broader region. The focus shifts from merely increasing visitor numbers to enhancing the quality of their experience. The aim is to better welcome tourists rather than attract more of them. The public authorities and tourist operators are trying to better valorise the current touristic offer from a sustainable perspective.
3. It is important to consider the connection between local communities and their territory while also raising awareness of ecological issues among residents and visitors. Many people have deep emotional, economic, and cultural ties to skiing and the resort, which strongly shape how they view and accept the economic transition. At the same time, new residents, who may have moved to the mountains for reasons unrelated to tourism or skiing, often bring different perspectives on the area’s future. This mix of perspectives can cause tensions and change local social dynamics, especially as new voices join local decision-making.

The adaptation process in Saint Pierre de Chartreuse and the Chartreuse region is a regional transition relevant to other ski resorts facing similar challenges. This example of a medium-sized area illustrates possibilities under climate change, creating new visions and narratives for economic development and for the future of winter sports.

“The transition of resort tourism is a long-term process, involving defining its specific path of evolution by implementing a participatory process organised within the territory“,

Emmanuelle George, INRAE

Summary

The Saint Pierre de Chartreuse/Le Planolet ski resort in the Chartreuse Massif in the Auvergne-Rhône-Alpes region illustrates the difficulties climate change causes for mid-mountain ski resorts. Reduced economic profitability and snowfall are challenging ski resort managers and local authorities. Since 2020, a stakeholder engagement process, reflecting on the given situation, has led to a transition, leading to sustainable and sustainable economic activities. The participative approach has enabled mobilising various stakeholders to identify key factors of change and create a new vision for the region.

Further information

The work presented in this adaptation story is part of the Interreg Alpine Space [TranStat](#) project.

This project has received funding from the European Union's Interreg Alpine Space programme under grant agreement ASP0100006.

This three-year project (2022-2025) presents the transition process required in ski tourism under a changing climate. The project supports local stakeholders in a network of nine different ski resorts throughout the process.



Contact

Emmanuelle GEORGE

Organisation: INRAE, Research Unit LESSEM

Email: Emmanuelle.george@inrae.fr



Disclaimer

This document reflects only the author's view and the European Commission is not responsible for any use that may be made of the information it contains.

Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

Reuse is authorised provided the source is acknowledged and the original meaning or message of the document is not distorted.

The European Commission shall not be liable for any consequence stemming from the reuse. The reuse policy of the European Commission documents is implemented by Commission Decision 2011/833/EU of 12 December 2011 on the reuse of Commission documents (OJ L 330, 14.12.2011, p. 39).

All images © European Union, unless otherwise stated. Image sources: © goodluz, # 25227000, 2021. Source: Stock.Adobe.com. Icons © Flaticon – all rights reserved.