

ACTIVITY: Workshop1/2_Haute Tarentaise_PILOT LANDSCAPE

DATE and TIME: Reconnaissance visit 2 – 3 September 2019 (Talks with many stakeholders in the Valley) / Workshop 9 October 2019

PLACE: Bourg St Maurice, Haute Tarentaise. Premises of the workshops of the Dairy Cooperative (Coopérative Laitière de Haute Tarentaise) in Bourg St. Maurice.

ORGANIZERS:

- Bas Pedroli / Wageningen University
- Agnès Patuano / Wageningen University
- Léonie Viallet, Chargé du Service Qualité, Coopérative Laitière de Haute Tarentaise

PARTICIPANTS 9 October 2019 | 16 :00 - 18 :30:

- Magali Borrel / Communauté de Communes de Haute Tarentaise
- James Merel / Bureau des Guides Bourg Saint Maurice, les Arcs
- Léonie Viallet / Coopérative Laitière de Haute Tarentaise

KEY OBJECTIVES and EXPECTED OUTCOMES of THE ACTIVITY (expected outcomes):

- Generation and Activation of a local network interested in working in Climate Change Adaptation through the AELCLIC-pathfinder project.
- Definition of an internal Work Plan for the implementation of the AELCLIC-pathfinder project in the Haute Tarentaise Multiplier Landscape

1. INTRODUCTION

We had three very committed participants in the workshop; unfortunately some other people had had to cancel their participation but they promised to come the next workshop, for which we now have a good basis and more people to attend. Anyway, the issues at stake are getting very clear and we are pretty sure a local consortium could support a strong landscape pilot for an eventual Deep Demonstrator!

2. ISSUES PERCEIVED

1. *Snow conditions:*

The melting of glaciers leads to more random snow conditions. Sometimes the differences in temperature make the snow safer because it is better packed. But between 1000 and 2000m the snow does not hold anymore.

Effect on the landscape:

Terrain: Melting glaciers make slopes more fragile and more susceptible to erosion.

Affected Populations:

Ski resorts are using more and more artificial snow, even undercoat, to be able to ski all season. As soon as the temperatures are sufficiently low (November), the under layer is packed and prepared. This adaptation is as much linked to the temperature change as to the economic context of competition with the resorts in Austria and Italy which also use artificial snow. Haute Tarentaise is considered a privileged landscape because there is still natural snow. Moreover, some winter sports professionals leave regions such as the Pyrenees or the Massif Central to come and continue to work. However, the valley is also more isolated from larger cities and therefore has a more fixed season schedule, compared to other places that can keep stations open longer (or on a more adaptable schedule depending on the snow) knowing that they will still have visitors.

Mountain guides need to adapt to find alternative routes. The falling rocks and landslides make some glaciers too dangerous.

Tourists continue to visit the area but they now come for other reasons and activities than winter sports. They enjoy hot and long summers. Christmas visitors often come with their families and fall back on other

activities if there is no snow, but the tourists who come for New Year, more numerous and more individualistic, are sometimes less accommodating.

The inhabitants recognize the difference between the activities they could do in their childhood (luge) and those practiced by their own children who benefit less from the snow.

2. Drought

The heat lasts longer and longer and heat waves are now almost annual. Long periods of drought hurt vegetation and waterways. The water restrictions put in place by the French government during the heat waves are also felt.

Effect on the landscape:

Springs and streams: Some springs dry up earlier in the year. The temperature of the water has also increased.

Vegetation: The grass dries faster and loses in quality. Affected Populations:

Farmers use stream water to cool the milk but it is sometimes too warm or too low. Producers in the valley who do not have irrigation are in trouble, in addition to water restrictions decided by the government to produce good quality fodder.

The inhabitants recognize the difference between the activities they could do in their childhood (luge) and those practiced by their own children who benefit less from the snow.

3. Transport:

How to take tourists on a mountain holiday with more and more people on the road?

There is a lot of traffic in Bourg Saint Maurice, because the valley forms a funnel which with a large number of ski resorts popular with tourists. It is difficult to build new roads because of mountains and scree. The problem is very complicated and it is not new. In 1992, the Olympic Winter Games organized in Albertville allowed the renovation of infrastructure but it is no longer sufficient.

There are already many tunnels to pass under the mountain but they are not always usable.

The trains also stop in Bourg Saint Maurice but they do not go further so you have to take the car. There is only one train lane so there are no possible crossings. In winter the Eurostar arrives at Bourg Saint Maurice.

On weekends and in summer roads are often blocked. The winter is less problematic since the visitors, once arrived, remain in their station, but the transport infrastructure still suffer from the influx. Accommodation companies offer staggered bookings to relieve traffic on weekends. Out of season, it is the construction companies that clog roads.

Without being a consequence of climate change, these transport and infrastructure problems themselves create more pollution, which encourages global warming. These problems also apply to the dairy cooperative, which has to join several breeding sites by road to collect the milk.

Action Plan: More buses and better transportation options should be offered, especially between the station and the stations. The English are more efficient to get people on the slopes with commuter shuttle systems. Many visitors come from far away but the problem is the French (and Belgians who come by car) who are not necessarily ready to take public transport.

4. Dairy farming

The Beaufort has saved local agriculture, to the point where the region is very dependent on this product and its PDO. If the product is going well, but the challenges, in terms of water quality and mountain pastures, threaten the sustainability of this economy. The importance of livestock for the functioning of the local landscape goes beyond the product itself. The grazed grass holds the snow, which prevents avalanches and what ski resorts appreciate. Some stations rent their land for free during the summer to be used in pastures. At the same time, some breeders work in the resorts during the season to supplement their income. There is therefore a system of exchange between ski resorts and breeders in the region.

For the moment, pastoralists adapt less than they suffer the consequences of climate change. Before, cheese production mobilized the whole landscape (wood for heating, etc.). The small producers used the "montagnettes" (an intermediate stage between valley and alpage) before taking their flocks in communal pastures but it is now more rare.

It becomes impossible to anticipate at the beginning of the season how the season will unfold. Animals are more numerous in summer than in winter because it costs less and they sometimes come from outside. Thanks to cooperatives you can make milk and cheese all year long.

The spirit of the alp and Beaufort is the summer pastures. Summer products are therefore more valued and therefore more sought after and therefore more product but it is based on high quality pastures.

Some owners rent their alp, sometimes more than 600 ha of land including pasture, glacier etc. These owners are mostly local and from the area. In fact, land is passed on as a family rather than by purchase / sale. You cannot build a chalet on it if there are no existing walls so the only value is the alp. They do not necessarily have value for foreigners.

5. Rain and thunderstorms

Participants report an increase in thunderstorms and heavy rains that contrast with periods of drought.

Effect on the landscape:

Terrain: The contrast between drought and heavy rains on very dry ground leads to destabilization of the soil and the creation of ravines.

Infrastructure: Arbonne floods and floods can damage infrastructure. This year, a bridge has been torn off. In Tignes, snow hunts have been requisitioned to rid the city of hail.

6. Change of vegetation

The forests go back higher and encroach on the agricultural parcels, reducing the extent of pastures and cultures. This extension effect of forest cover is also linked to the decreasing number of farmers and small farmers.

In addition, abandoned plots are sometimes covered with an Alder species (*Alnus viridis*), a bushy and colonizing shrub that also threatens the persistence of alpine pastures by reducing pasture area.

3. Towards an Action plan

1. For mountain guides:

Currently no possibility of a coherent and unifying plan, but themselves adapt from year to year to propose new safer hiking routes and to propose other activities to the visitors. Everything is done voluntarily (too much bureaucracy) for the layout of the trails, climbing walls and so on. No existing subsidies.

2. For farmers:

The main issues are water and air. Water should be brought where there is none, perhaps by changing irrigation techniques (canals).

Subsidies exist for all breeders but they do not all benefit in the same way. An action plan would be useful, but it must consider all farmers fairly. Indeed, alpine pastures are fragmented. Some lands are private, others public and each has its own issues. It currently lacks decision-making power with a global point of view. The dairy cooperative (which groups around fifty breeders of all sizes, from 3 to 150 cows) has a key role in the valorisation and marketing of the final product but it is less involved in the operationalization of farms or collaboration with farmers. other stakeholders involved.

4. General notes

The consequences of global warming are not all felt in the same place or in the same way. Some pastures are better than others (depending, for example, on their irrigation system).

The production of electricity by hydraulic dams does not seem to be affected because several dams exist and offset each other. In general, electricity is mostly taken in winter, when drought is less problematic.

Other effects, more anecdotal, were also mentioned such as the wind.

Regarding *Biodiversity*: The flowering of vegetation appears either earlier or later than expected but all years or all places are not equal. Generally, the effects on biodiversity are not necessarily visible to the naked and untrained eye. A positive point: Griffon vultures introduced into the Verdon and Gorges du Tarn then migrated to the region.

Next Workshop: Tuesday, October 22 from 10am to 11.30am at the Coopérative Laitière Haute Tarentaise (ZA Colombières). Registration at <https://www.eventbrite.com/e/workshop-country-adaptation-to-change-climate-tickets-76033457117>

Summary of major issues

Enjeu	Impacts paysage	Parties concernées	Potentiel d'adaptation	Enjeux liés	Actions envisageables
Fonte des glaciers ; insécurité de neige	<ul style="list-style-type: none"> • Rends les pentes plus fragiles • Chute des pierres • Biodiversité 	<ul style="list-style-type: none"> • Stations de ski • Guides de montagne • Touristes • Habitants 	<ul style="list-style-type: none"> • Neige de culture • Adapter les sentiers et routes d'escalade • Développer autres formes de tourisme 	<ul style="list-style-type: none"> • Compétition avec autres stations de ski • Pâturage pour mieux tenir la neige 	Vision du paysage de la Vallée à 2050 <ul style="list-style-type: none"> • Identifier les intérêts des parties prenantes • Définir des routes réalistes vers le future souhaité • Identifier des financiers potentiels • Division des subventions plus équitablement • Etc.
Sècheresse	<ul style="list-style-type: none"> • Sources et ruisseaux tarissent • L'herbe sèche plus vite • Biodiversité • Abandon des alpages et des montagnettes 	<ul style="list-style-type: none"> • Eleveurs • Habitants • Touristes 	<ul style="list-style-type: none"> • Irrigation • Déplacer les alpages vers la hauteur • Diminuer le nombre de vaches 	<ul style="list-style-type: none"> • Tourisme d'été • Patrimoine culturel 	
Augmentation de situations extrêmes météo	<ul style="list-style-type: none"> • Erosion • Inondation • Déstabilisation des sols • Chute d'arbres 	<ul style="list-style-type: none"> • Habitants • Eleveurs • Touristes 	<ul style="list-style-type: none"> • Bassins de rétention • Mesures d'ingénierie 	<ul style="list-style-type: none"> • Aménagement des services techniques 	
(non-climat) Manque de capacité de transport, particulièrement les weekends en hiver	<ul style="list-style-type: none"> • Pollution • Perte de temps • Durabilité 	<ul style="list-style-type: none"> • Habitants • Touristes • Entrepreneurs • Stations de ski 	<ul style="list-style-type: none"> • Favoriser le transport publique • Améliorer les routes • Adapter l'arrivée et départ des touristes 	<ul style="list-style-type: none"> • Gouvernance • Manque d'investissements 	