

SHORT FOREST-TIMBER VALUE CHAINS IN TIMES OF CLIMATE AND GEO-POLITICAL CRISES

Fred BERGER



INRAE



EUSALP EU STRATEGY FOR THE ALPINE REGION

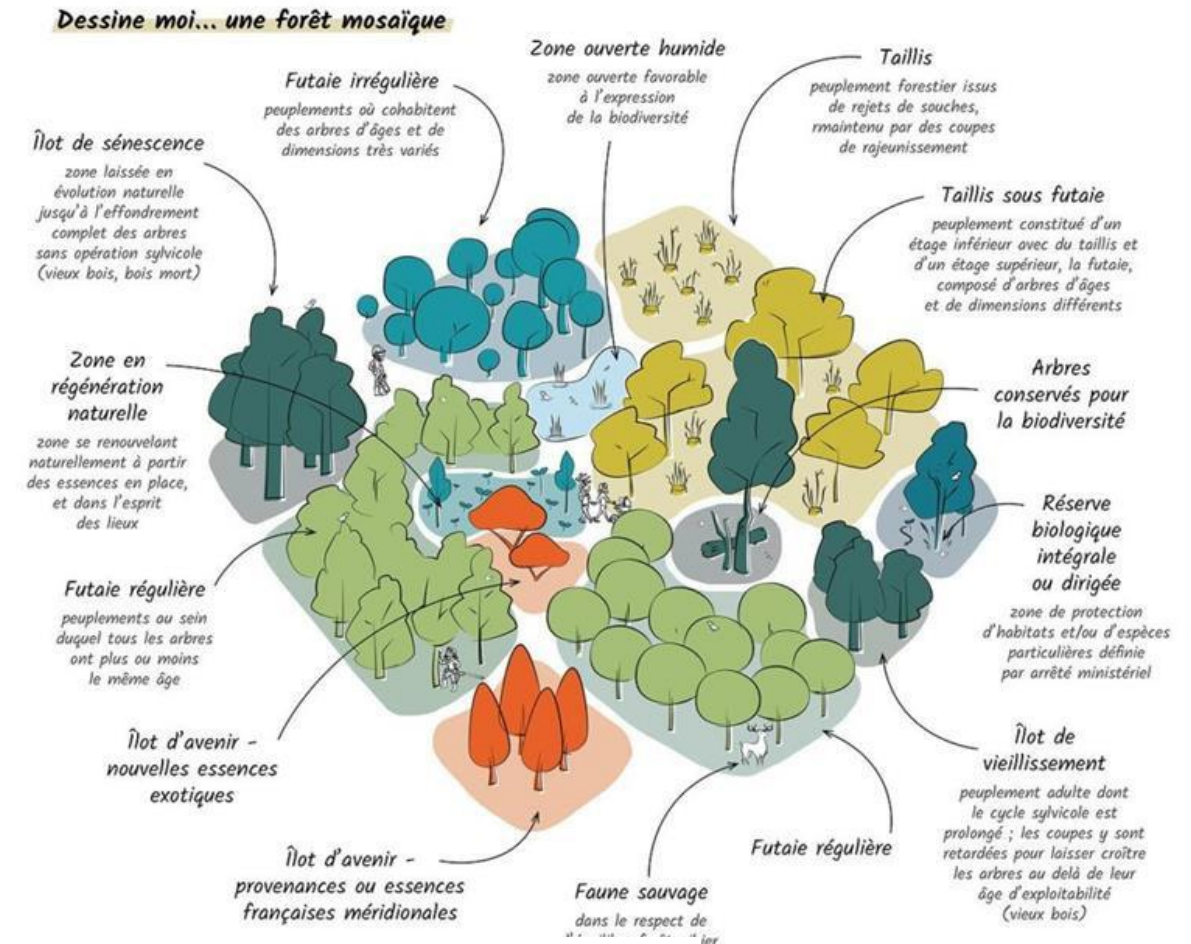
Trento, 22th-24th November, 2022



Forest management = a balancing act
biodiversity, protection, harvesting, carbon, etc.

Multifunctionality: resilient, functioning forests

=
mosaic forest



EUSALP EU STRATEGY FOR THE ALPINE REGION

The forests of the Alps: a long human history....

Céüse : RTM 1889-REY 2009



EUSALP EU STRATEGY FOR THE ALPINE REGION

The forests of the Alps: a long human history....

Céüse : RTM 1889-REY 2009



EUSALP EU STRATEGY FOR THE ALPINE REGION

The forests of the Alps: a long human history....

Crolles (Isère)

A



1911

B

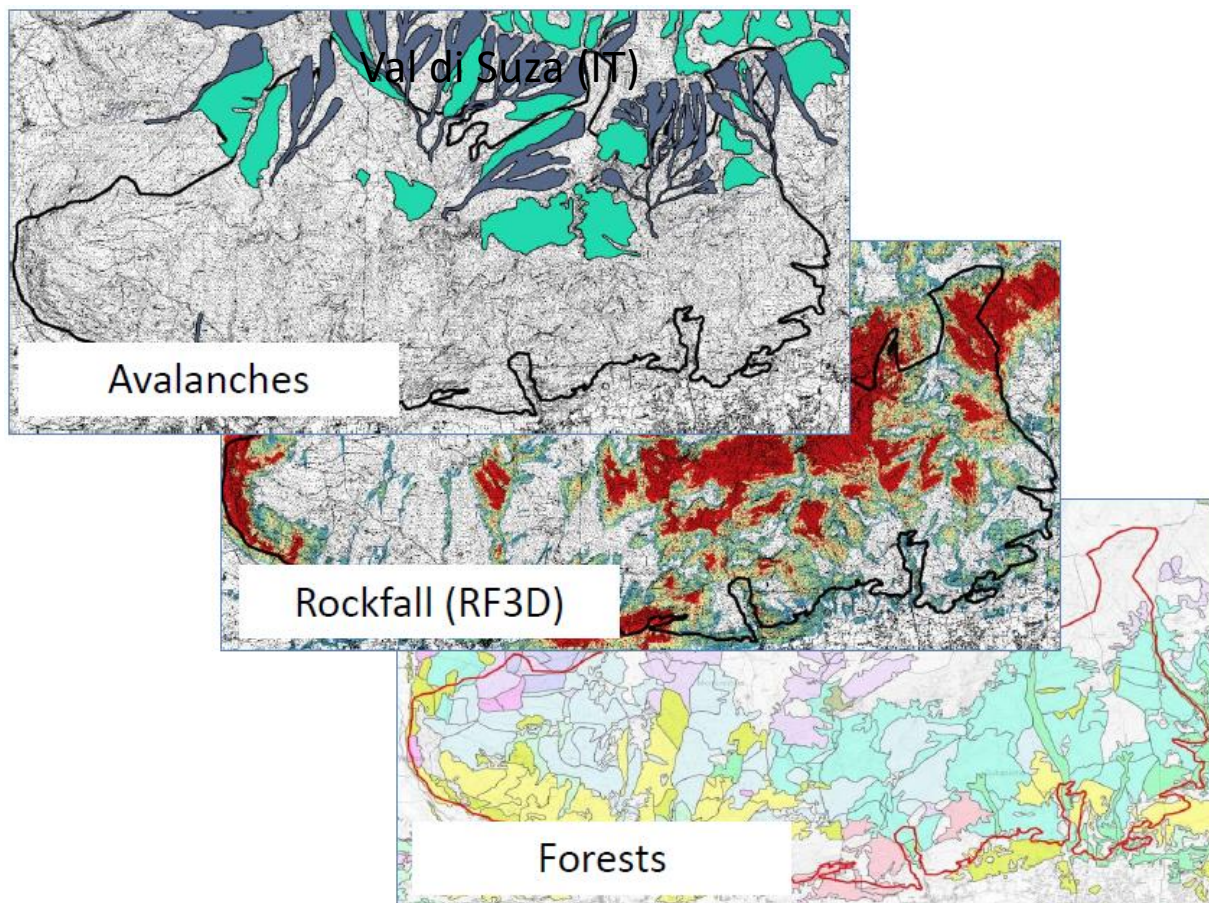


2017

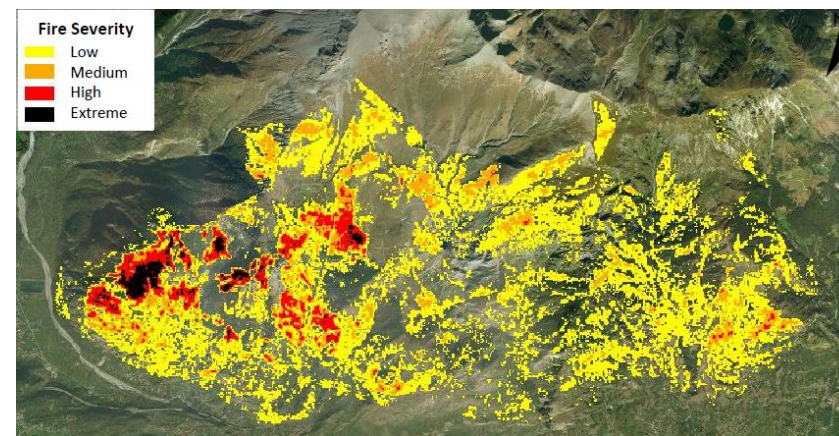


EUSALP EU STRATEGY FOR THE ALPINE REGION

Ecosystems services exposed to multi-risk



Forest fire in 2017



CLIMATE CHANGE...

Disruption of tree and ecosystem functioning

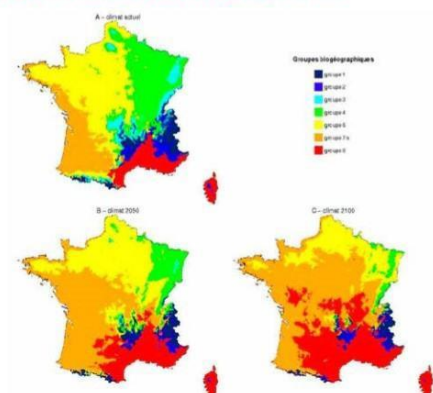


Fires



Change in species' range

Figure 17 – Les bioclimats de France et leur projection en climat futur



(a) Répartition géographique de sept groupes d'espèces de même affinité climatique, obtenus par analyse discriminante sur le climat actuel;

(b) Projection de ces bioclimats en 2050;

(c) Projection de ces bioclimats en 2100.

Scénario A2 Arpège.

Source : Badaud, in Loustau, éd., Quae, 2010.

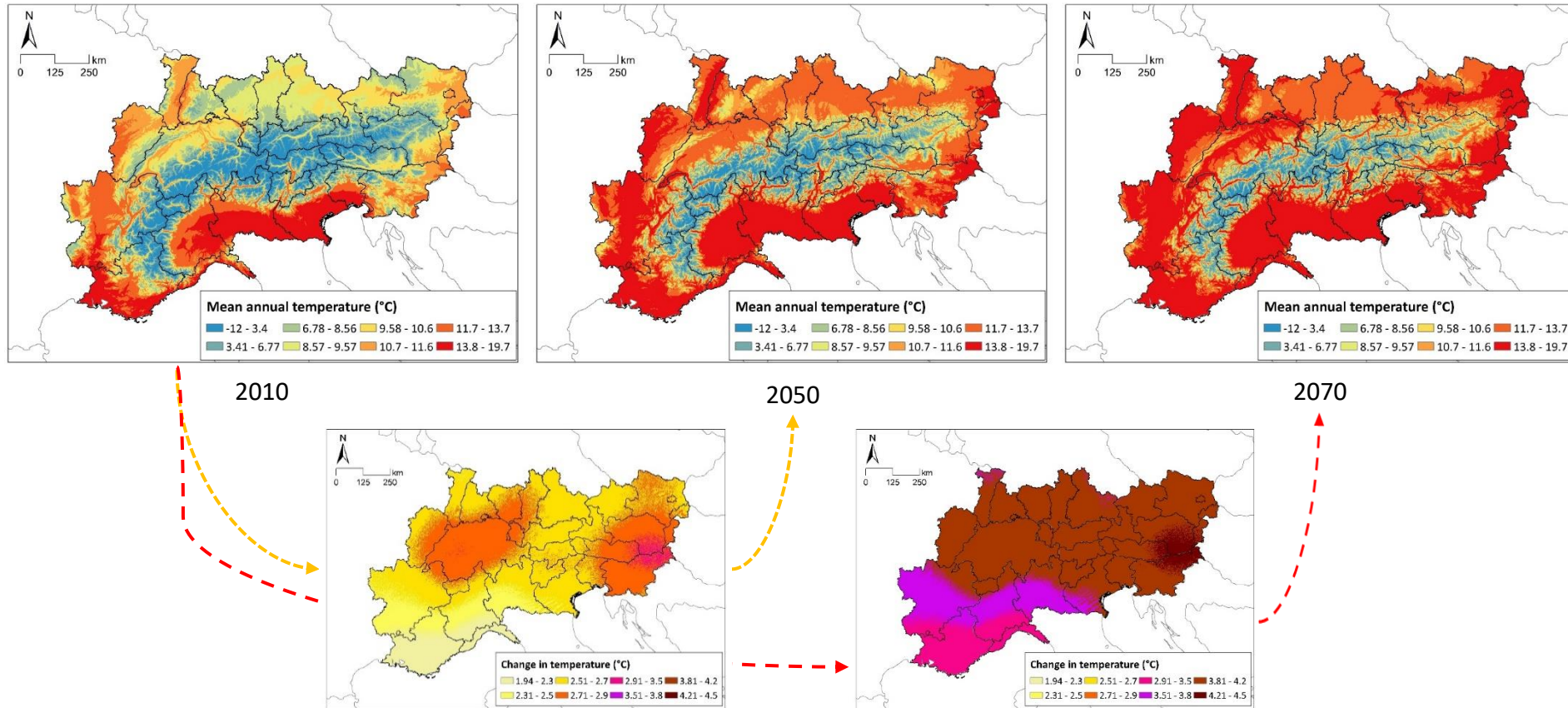
The uncertainty of 2100 (climate scenarii):

- species upwelling 800 km north or 800 m in altitude ??
- resilience of existing species ???



EUSALP EU STRATEGY FOR THE ALPINE REGION

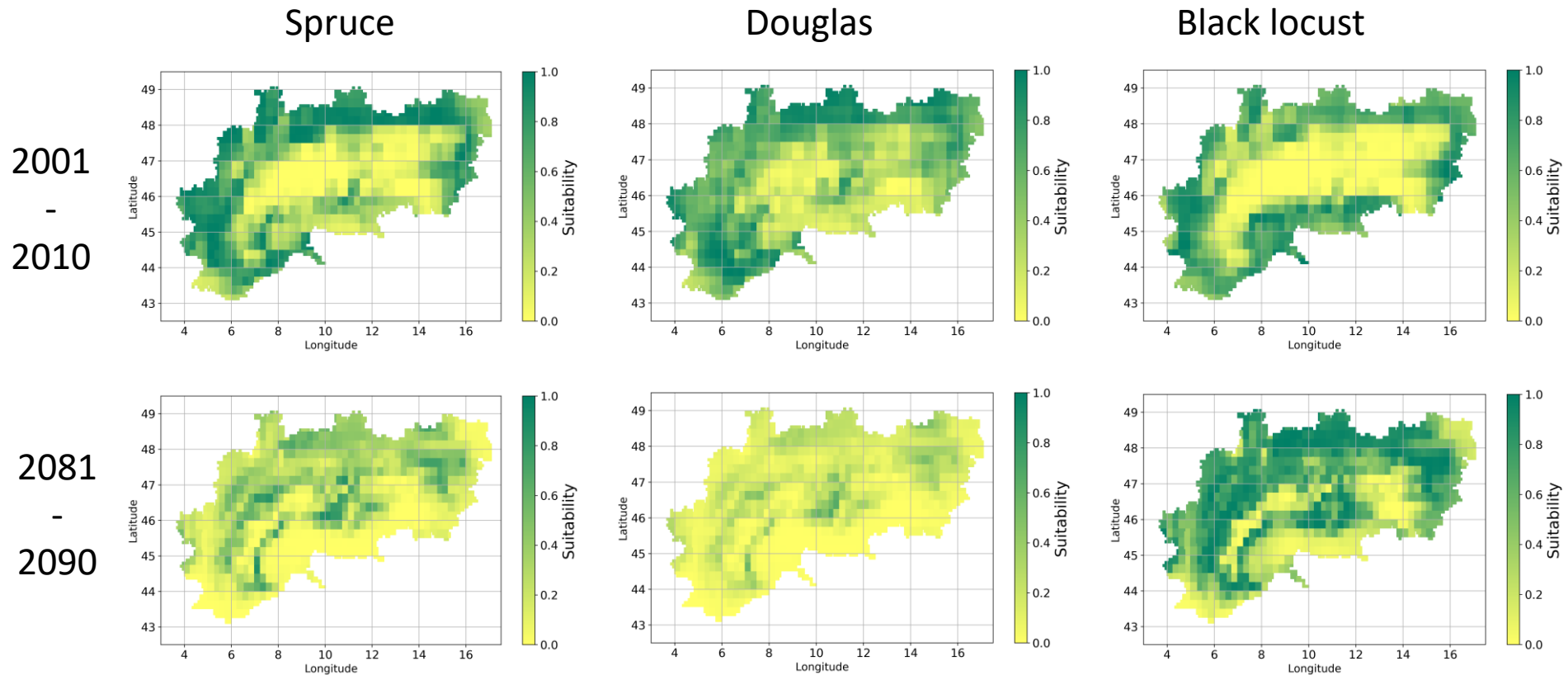
Annual mean temperature in the Alpine region (base year 2010; projections: 2010-2070)



EUSALP EU STRATEGY FOR THE ALPINE REGION



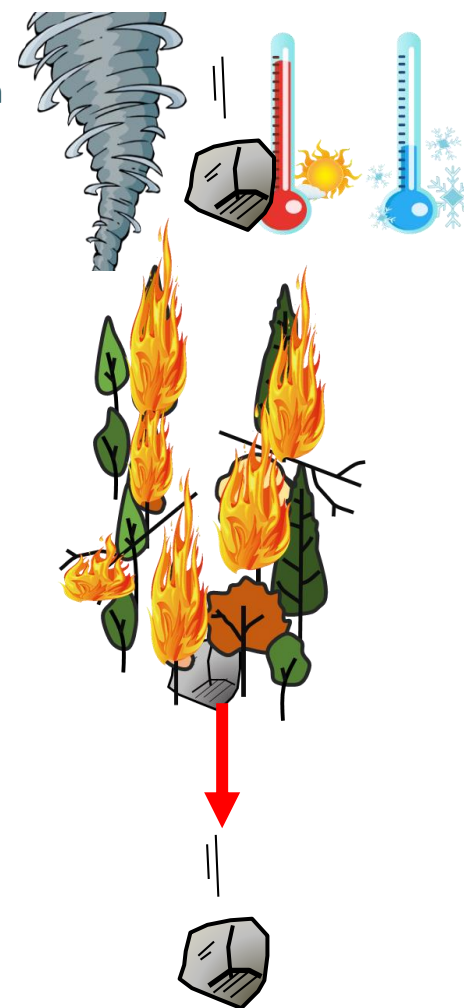
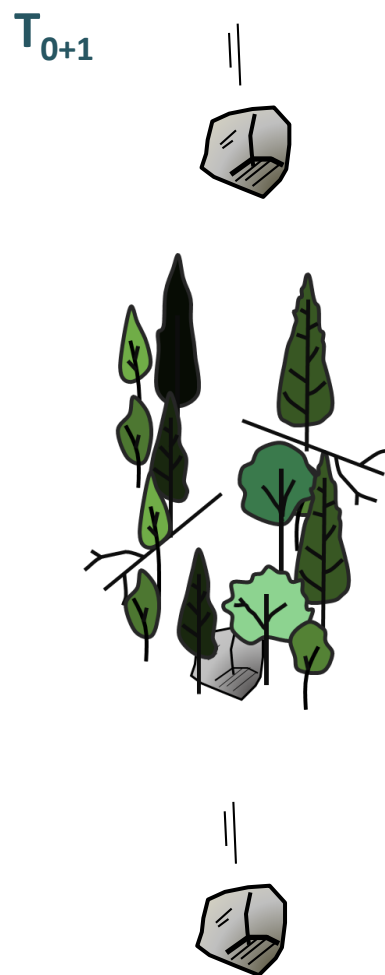
Likely consequences of CC for tree species (RCP8.5)



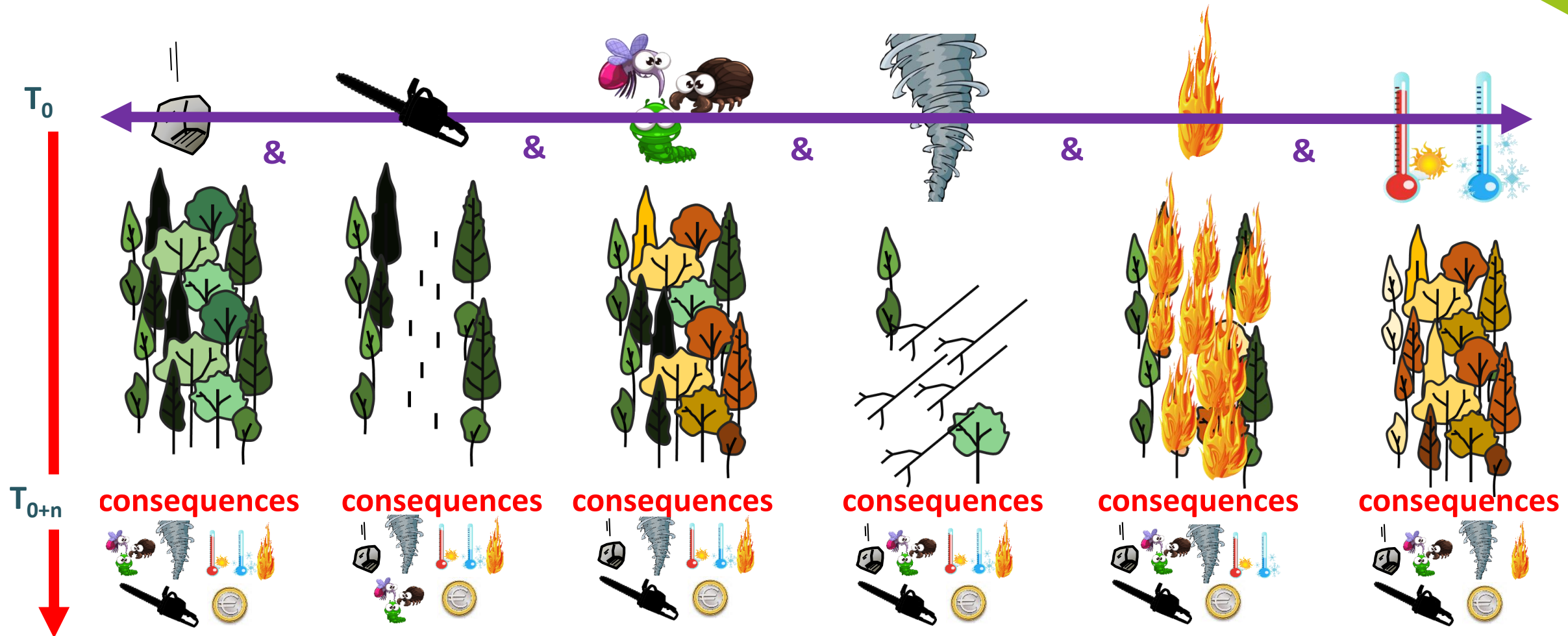
Impacts on the forestry, timber, wood sectors? Is the “system” resilient? What for a resilient system?



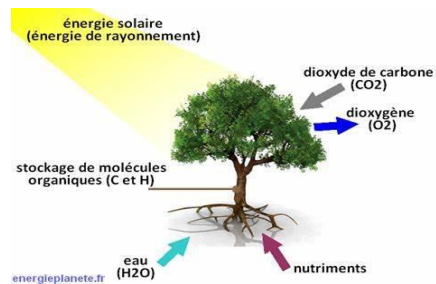
EUSALP EU STRATEGY FOR THE ALPINE REGION



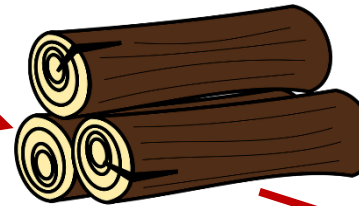
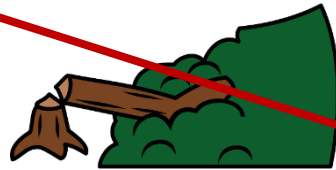
CC compound effects



Cascading effects



3 to 5 tons of CO₂ per hectare and per year



1 m³ timber
≈
1 ton fresh wood
≈
250 kg C
≈
1 tCO₂

1 200 000 tons/year
=
carbon footprint of 150000
persons

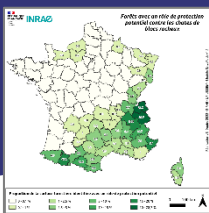


80-year storage,
alternative to
concrete

1. Sequestration,
ForeSSST : 2. Storage,
3. Substitution



EUSALP EU STRATEGY FOR THE ALPINE REGION



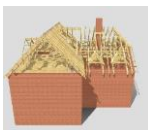
Resilience 1 = which forest ecosystem services and where?



Resilience 2 = soil in good condition and functioning well



Resilience 3 = harvesting but not in any way



Resilience 4 = a reasoned use



Resilience 5 = high biodiversity in managed forests



Resilience 6 = adapted training, education, communication, public awareness, territorial intelligence

Innovations : one of the solutions

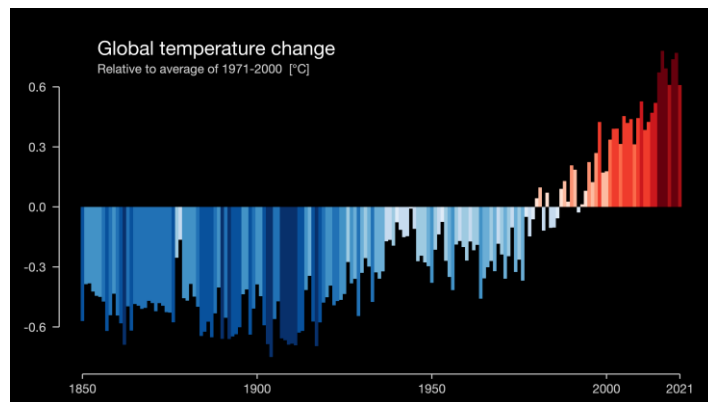


Uncertainties related to:

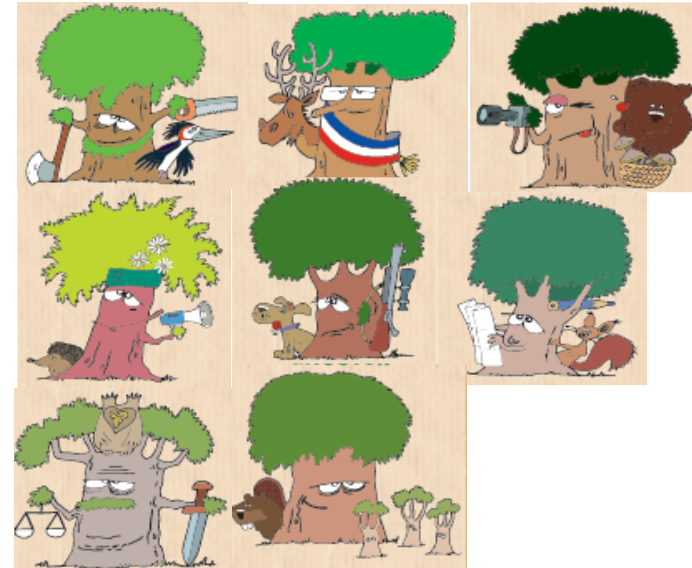
Knowledge, data, models, scales



CC....



Stakeholders, decision makers....



Policy makers, policies....

2000



PARAMOUNT



2022 ?



EUSALP EU STRATEGY FOR THE ALPINE REGION



Managing protective forests facing climate change compound events

P1 - Climate resilient and green Alpine region

SO 1.1 - Promoting climate change adaptation and disaster risk prevention, and resilience, taking into account eco-system based approaches

Forests provide essential ecosystem services that support human well-being and play a crucial role in the mitigation of climate change. However, their health and stability are also particularly affected by recurrent **climate-related disasters**. Therefore, MOSAIC focuses on **hazard-resilient and sustainable forest management**, which is essential for managing climate-related risks. In order **to support Alpine climate action plans**, the project partners aim to collect, harmonise and share data on Alpine climate-related disasters and trends. They strive to raise awareness among foresters, risk managers, decision makers and the public through **an Alpine network of forest living labs**.

Led by INRAE LESSEM, Grenoble

Under the coordination of Dr. Fred BERGER

For any information, contact: frederic.berger@inrae.fr



ADAPTation Capacity Strengthening for Highly Affected and Exposed Territories in the Alps **NOW**

P1 - Climate resilient and green Alpine region

SO 1.1 - Promoting climate change adaptation and disaster risk prevention, and resilience, taking into account eco-system based approaches

ADAPTNOW overall objective is to increase the **risk management and adaptation capacities of Highly Affected and Exposed Alpine Territories (HAET)** through the implementation and evaluation of **agile, integrated, systemic and participatory approaches** coordinated by regional and local public authorities with the support of sectoral agencies and research institutes.

Led by AURA 2E, Lyon

For any information, contact: rogelio.bonilla@auvergnerhonealpes-ee.fr



supporting multiple **Forest Ecosystem** services through new circular/green/bio markets and **Value** chains

P2 - Carbon neutral and resource sensitive Alpine region

SO 2.2 - Promoting the transition to a circular and resource efficient economy

The Forest EcoValue project is based on the acknowledgment that restoring and maintaining healthy forests can generate a value for the benefit of the whole Alpine region, as well as businesses and green job opportunities for the alpine communities.

The Forest EcoValue project intends to tackle this challenge and turn it into an opportunity, by developing **innovative sustainable win-win business models for forest management and maintenance**, based on **new value chains**, and involving different sectors (energy, construction, chemistry/pharma, food, recreation etc.), public and private actors, as well as citizens. The project will **propose new frameworks for public-private markets and payment schemes**, maximizing the **value of FES** towards the regional value chains.

Led by Finpiemonte

Under the coordination of **Susanna Longo**

For any information, contact: susanna.longo@finpiemonte.it



Transitions to sustainable Ski Tourism in the Alps of Tomorrow

P1 - Climate resilient and green Alpine region

SO 1.1 - Promoting climate change adaptation and disaster risk prevention, and resilience, taking into account eco-system based approaches

Today, mountain resort stakeholders are faced with a common challenge: coping with the effects of climate change without having **a robust reference framework for action**

The TranStat project aims to facilitate the adoption of **co-constructed transition processes** in Mountain Resorts (MR), understood as ski resorts and their territory

Based on a participatory and inclusive approach, TRANSTAT will aim at elaborating scenarios and co-constructed solutions able to respond to the challenges identified in the MRs. The challenge is to promote **new models of economic, social and environmental development** in order to support a lively future in the Alpine mountain areas, with a view to sustainability.

TranStat will address this overall issue through the creation of **a physical & digital network of resorts in transition** to share knowledge and experiences about the future

Led by INRAE LESSEM, Grenoble
Under the coordination of **HDR Dr. Emmanuelle George**
For any information, contact: emmanuelle.george@inrae.fr

