

# The project ROCKtheALPS: Challenges/objectives/results

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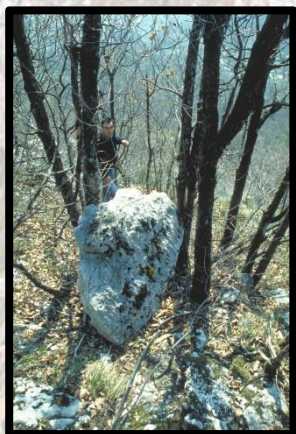


# Rockfalls risk : one of the major natural risks in the Alps !





# Alpine forests are rock stars !





# Alpine forests are rock stars : but with some limits!





# What is the objective of our project?

- The **preservation and enhancement of the protective role of forests** against natural risks are **key to an efficient strategy for strengthening the liveability** of the Alpine Space.
- The 6 Pan EU Ministerial Conferences on the Protection of Forest held since 1990, have all stressed **the need for a common approach to value Forest Ecosystem Services (FES)** as a **basis for developing a Sustainable Forest Management**.
- **Priorisation of Forest Ecosystems Services** has to be done on the basis of societal needs.
- **Harmonised methods for mapping** protective FES are currently not available.

The main objectives of RTA is **to provide the 1st AS regional rockfall risk zoning tool**, as well as **the 1st AS wide harmonised map of rockfall risk and protection forests**



# What are the expected outputs of our project?

## Harmonization at the AS scale

- Definitions
- Methodologies
- Models
- Mapping

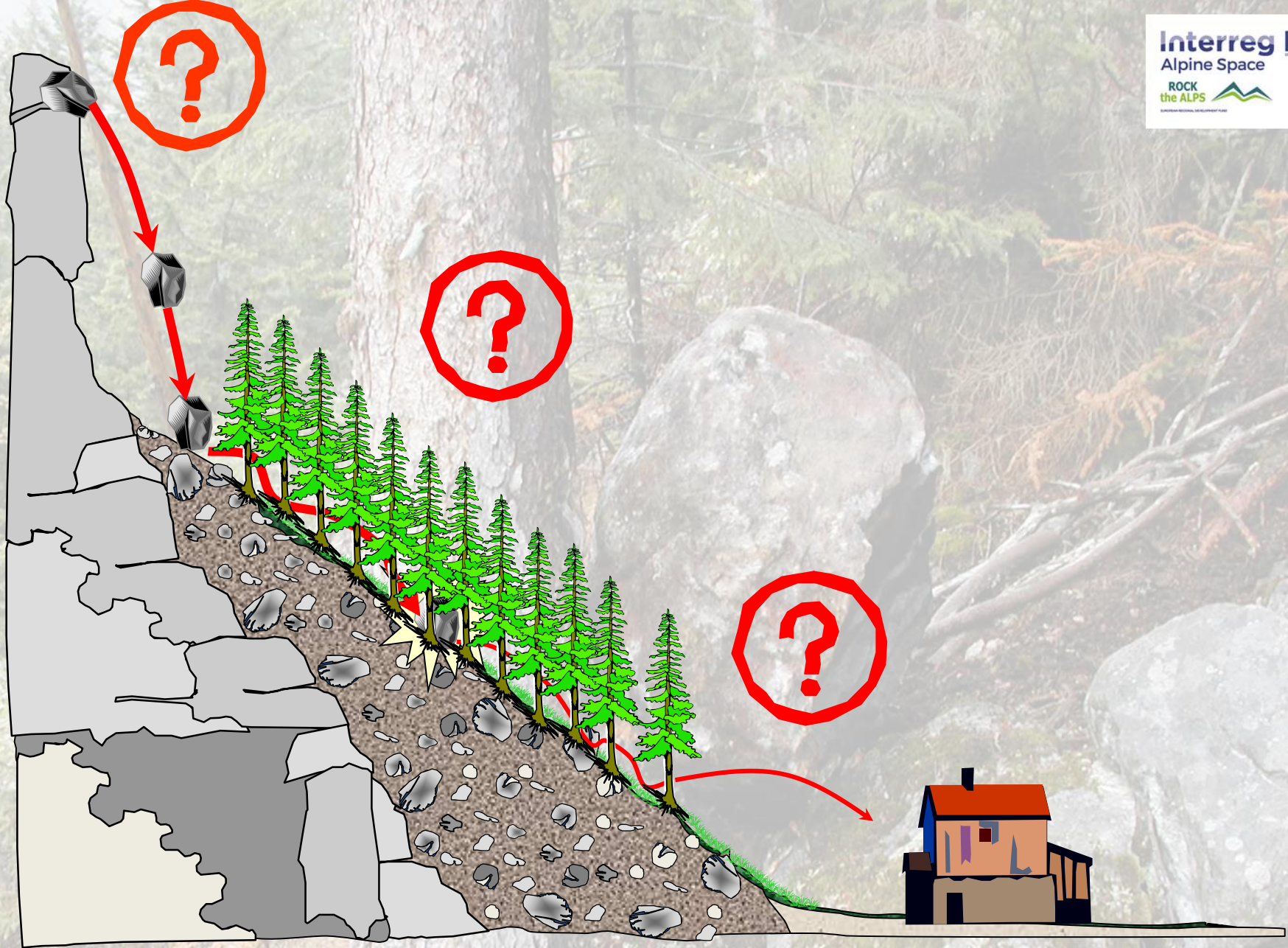
## Production

- Maps
- Factual data

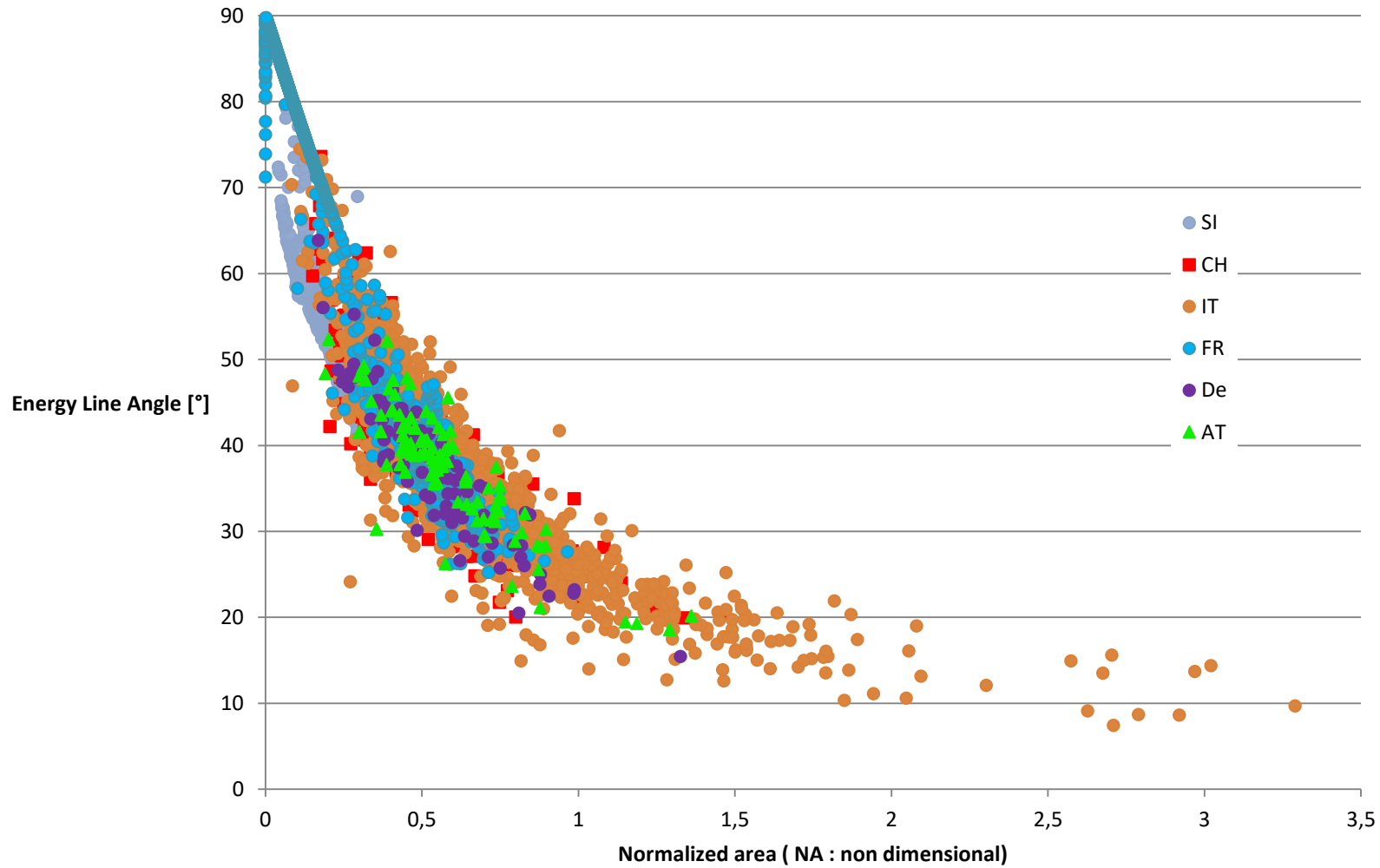
## Improvement

- EU forest policy
- PFAR management
- PFAR economic valuation
- Public awareness





Energy Line Angle vs AA(per countries) ( 9589 records)



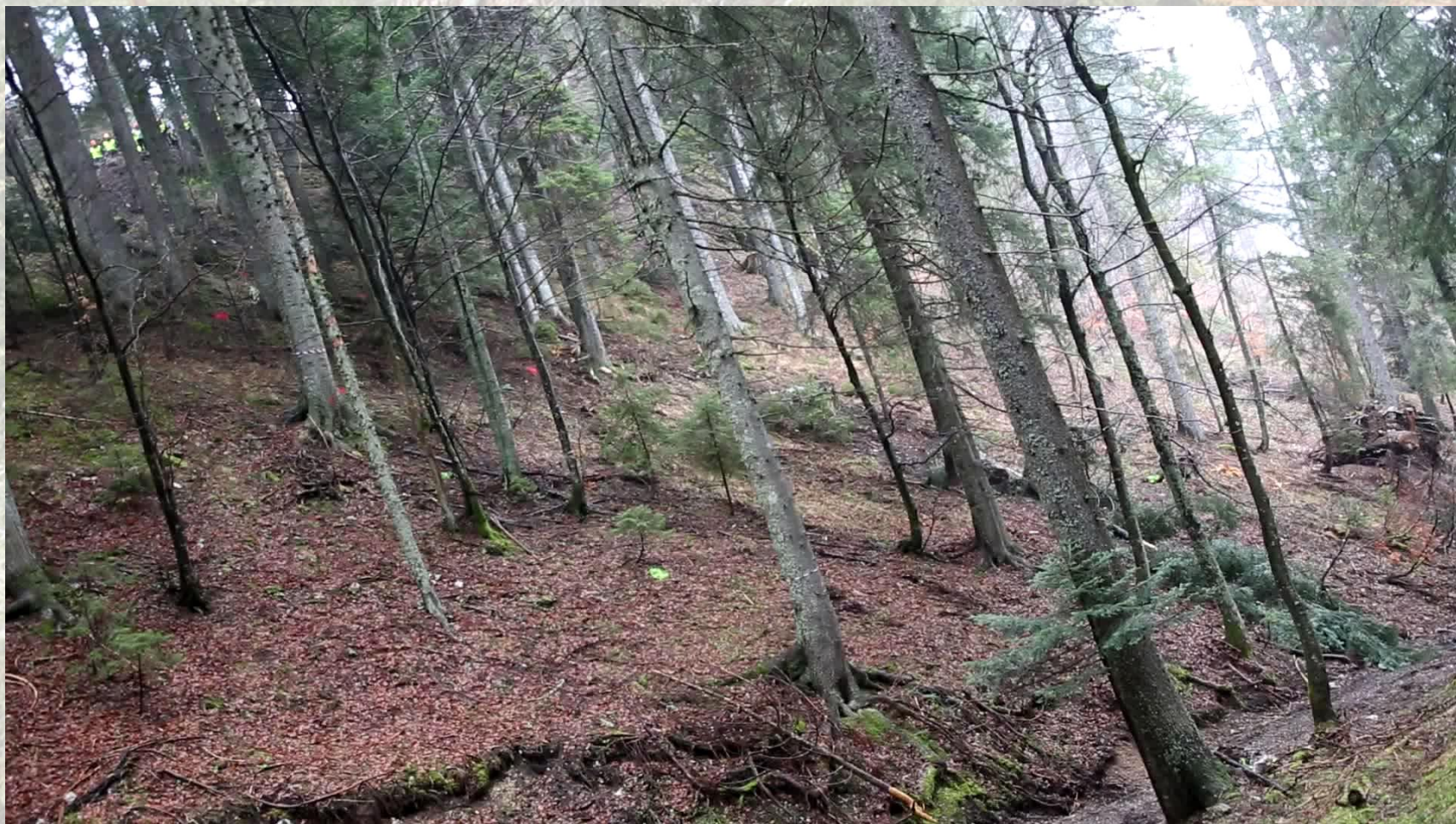




# INTERFOLKJUNGFRAU

## DAS FESTIVAL DER FOLKLORE





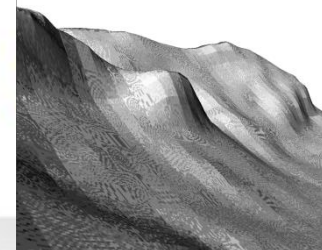
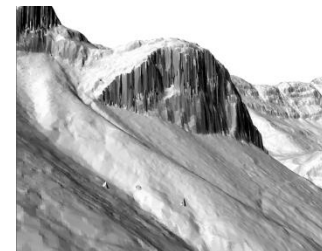


# Mapping for the entire Alpine space :

Total area of the AS

379448 km<sup>2</sup>

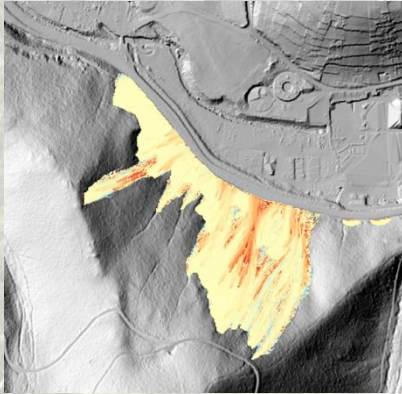
## Need to find a compromise between :





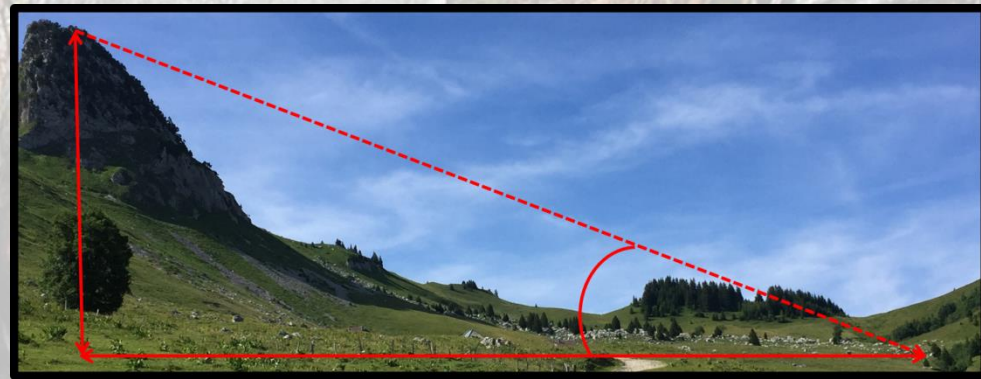
# A new topographic index for a new model : ROCK-EU (ROCK- )

An extremely simplified 3D model (

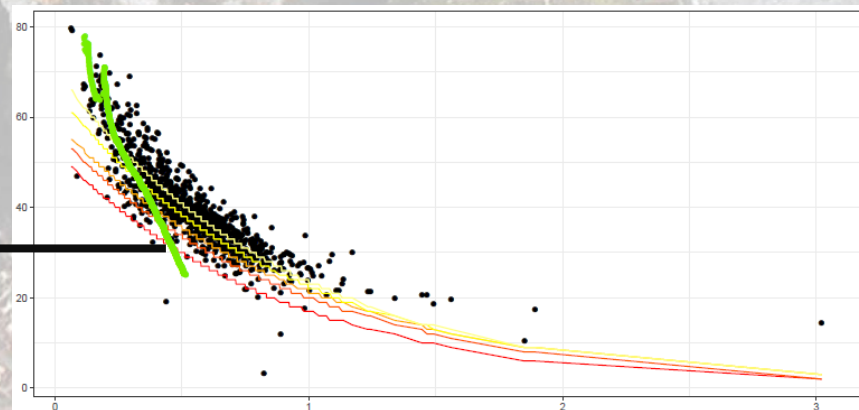


For determining the axis  
of potential trajectories  
from one release point

The Normalised Area concept with quantile regression



The trajectory calculation is stopped  
when the ELA calculated is out from the  
observed point clouds  
(extrem limit currently fixed at 25°)



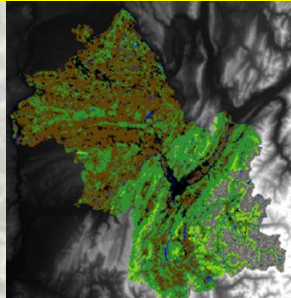


# The mapping methodology

**DTM : 25\*25m**



**Corine land Cover**



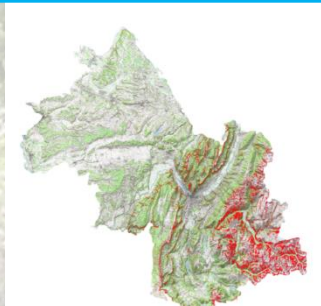
**Assets**



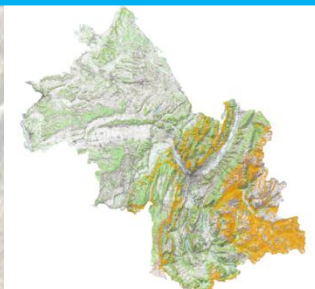
**Forests**



**Identification  
of release areas**



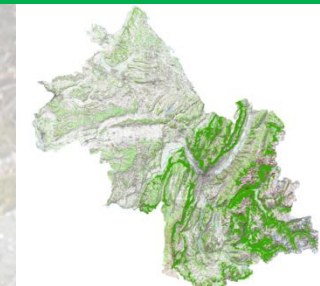
**Modelling  
of runout zones**



**Potential  
endangered issues**



**Protective forests**





**Interreg Alpine Space**

**ROCK the ALPS**

Legend: Alpine Space (Green), Non-Alpine Space (Red)

Scale: 1:1,000,000

Partners:

- OBFW (Österreichischer Bundesfonds für Wirtschaftsförderung)
- firstea (First European Alpine Space)
- ecofys (European Centre for Alpine Space)
- B (Bavarian State)
- DISAFA (Dissemination and Information for Alpine Space)
- Other regional and national authorities

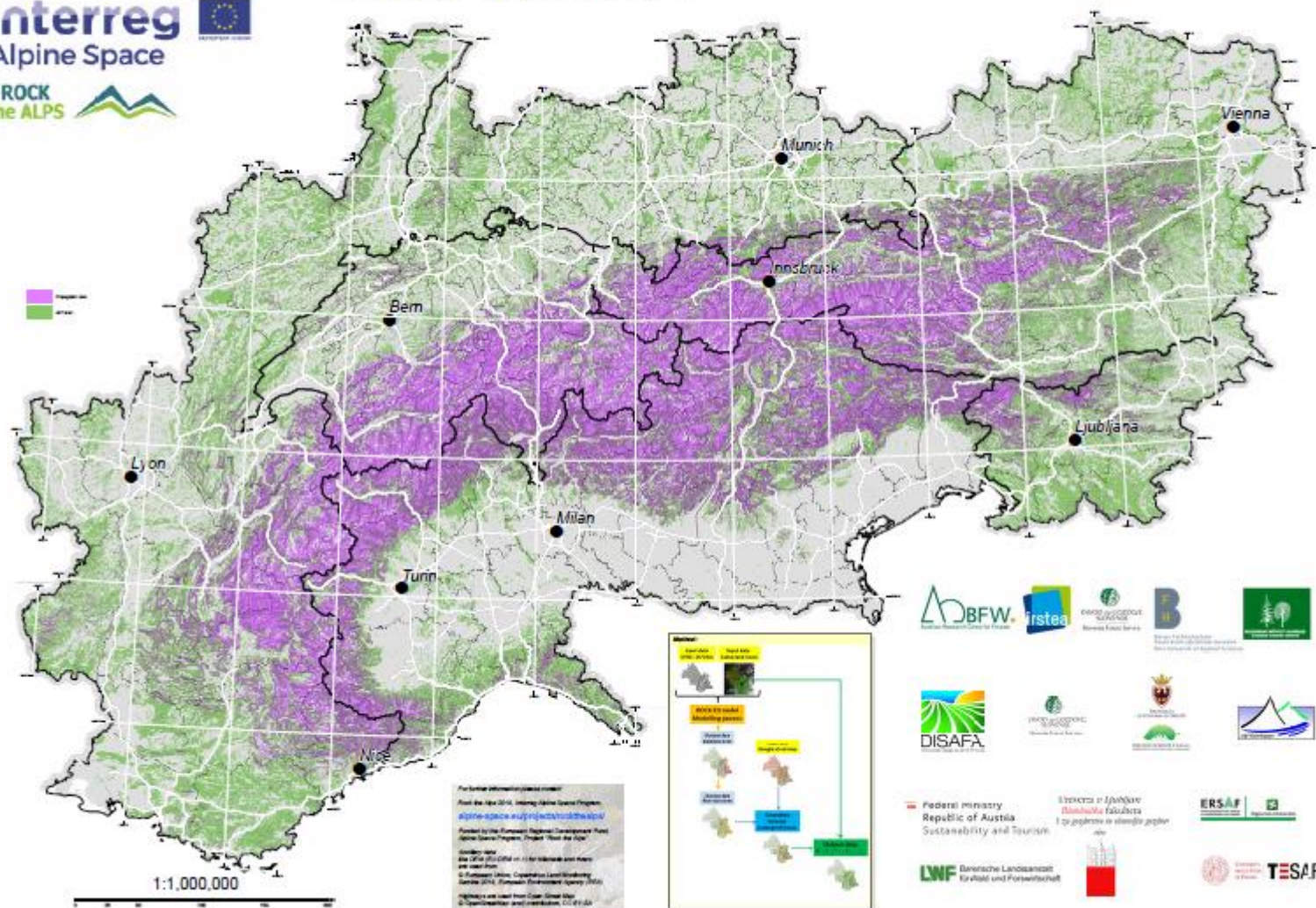
Project Structure Diagram:

```

graph TD
    A[Alpine Space] --> B[Non-Alpine Space]
    B --> C[Alpine Space]
    C --> D[Non-Alpine Space]
    D --> E[Alpine Space]
    E --> F[Non-Alpine Space]
    F --> G[Alpine Space]
    G --> H[Non-Alpine Space]
    H --> I[Alpine Space]
    I --> J[Non-Alpine Space]
    J --> K[Alpine Space]
    K --> L[Non-Alpine Space]
    L --> M[Alpine Space]
    M --> N[Non-Alpine Space]
    N --> O[Alpine Space]
    O --> P[Non-Alpine Space]
    P --> Q[Alpine Space]
    Q --> R[Non-Alpine Space]
    R --> S[Alpine Space]
    S --> T[Non-Alpine Space]
    T --> U[Alpine Space]
    U --> V[Non-Alpine Space]
    V --> W[Alpine Space]
    W --> X[Non-Alpine Space]
    X --> Y[Alpine Space]
    Y --> Z[Non-Alpine Space]
    Z --> AA[Alpine Space]
    AA --> AB[Non-Alpine Space]
    AB --> AC[Alpine Space]
    AC --> AD[Non-Alpine Space]
    AD --> AE[Alpine Space]
    AE --> AF[Non-Alpine Space]
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    CA --> CB[Non-Alpine Space]
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    CD --> CE[Alpine Space]
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    CF --> CG[Alpine Space]
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    JL --> JM[Alpine Space]
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    JO --> JP[Non-Alpine Space]
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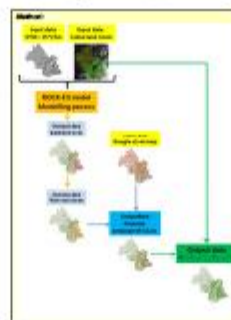
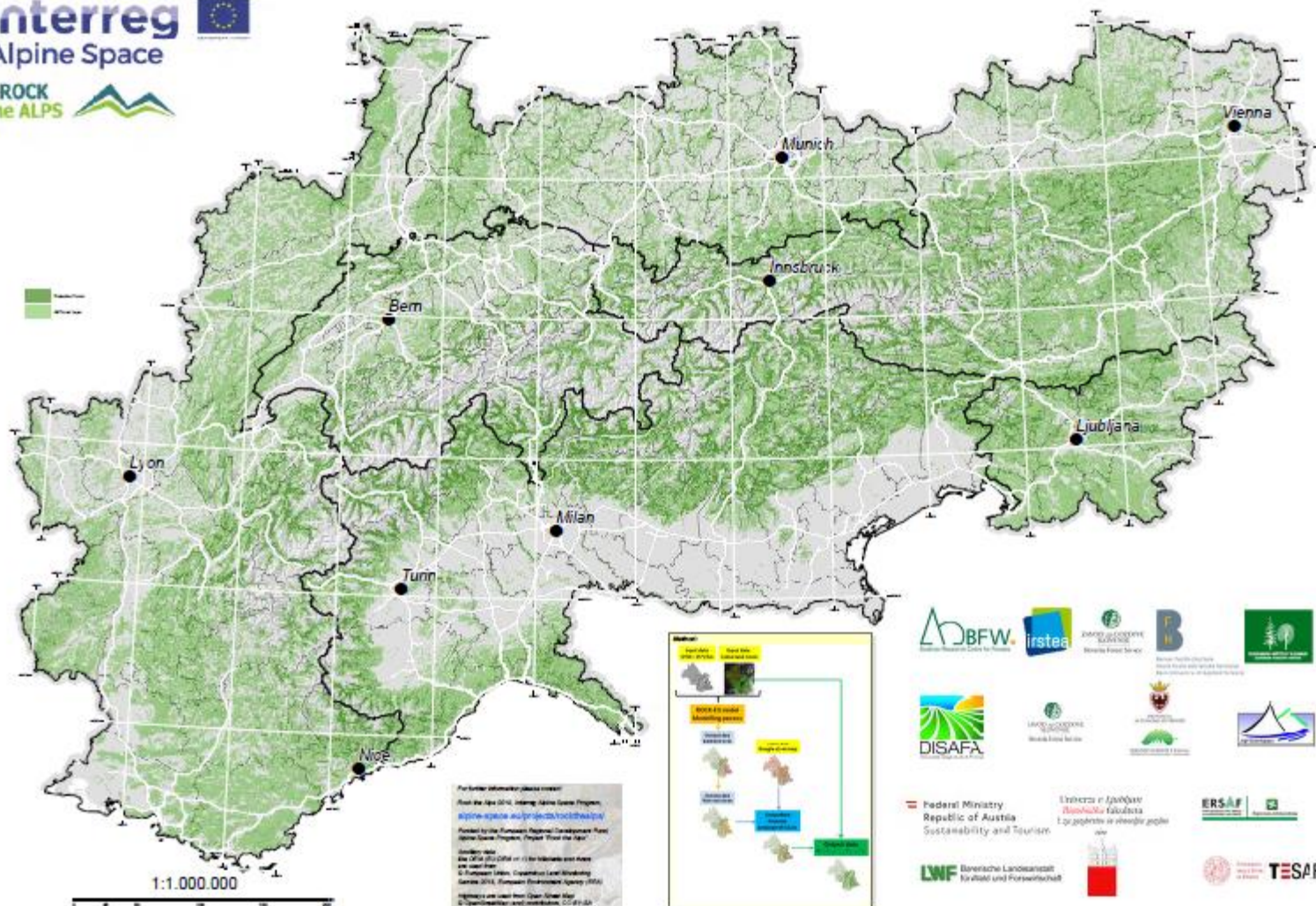


### Rockfall - Propagation Areas and Total Forest





# Rockfall - Protection Forest and Total Forest









Proportion of protection forest	
Alpine Space area	14,00%
Alpine Convention area	21,50%

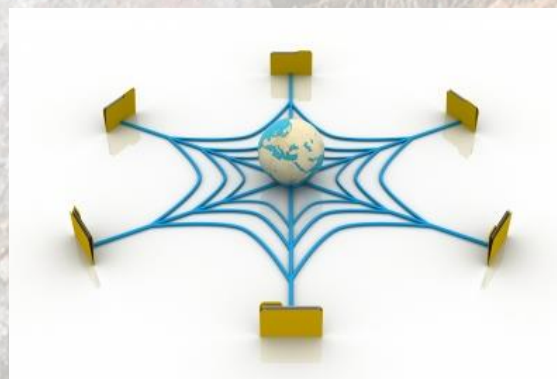


# What about an international rockfall events database?

We have to share our data for :

- Improving our knowledge
- Developing harmonized models

We need to develop an international network and cooperation for building up an international rockfall past events data base



Currently the RTA db contains 10620 trajectories corresponding to 6116 events

**We need you !**

**If you are interested please contact  
[frederic.berger@irstea.fr](mailto:frederic.berger@irstea.fr)**



**For more information:**  
[www.alpine-space.eu/projects/rockthealps](http://www.alpine-space.eu/projects/rockthealps)

# **What about; Rock the World?**