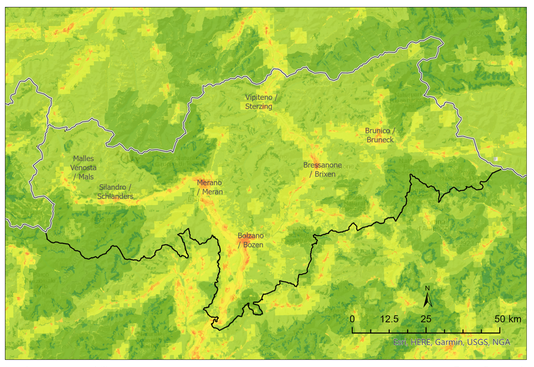
Towards an ecological network concept for South Tyrol:

Integrating green corridors into provincial and municipal planning

Interreg Alpine Space — Co-funded by the European Union

PlanToConnect

Picture 1: Barriers in the Adige Valley in South Tyrol (Photo: Laner P (2025))



Landscape permeability
- 1 - highly artificial areas, very high barrier effect
- 2 - artificial areas, very high barrier effect
- 3 - artificial areas, high barrier effect
- 4 - artificial areas, barrier effect
- 5 - semi-natural areas, high antropogenic influence
- 6 - semi-natural areas, important for connectivity
- 7 - natural areas, important for ecological connectivity
- 8 - natural areas, ecological value
- 9 - natural areas, high ecological value
- 10 - highly natural areas, very high ecological value
- National boundaries
- Boundary South Tyrol

Eurac Research
Institute for Regional Development.
Cartography: Peter Laner.
July 2023

Sources: Values for landscape permeability from ALPARC (AlpBioNet2030 project). Eurostat/ GISCO 2021 for administrative boundaries.

1 Why act here? — *"Ecological connectivity in South Tyrol"*

Study area: Autonomous Province of Bolzano - South Tyrol, Italy
Area size: 7.400 km²,
Altitudes: 200 - 3.905 m.a.s.l.

Problems:
- Missing provincial ecological network plan
- Missing connections between mountain slopes on different sides of the valleys.
- Main pressures in the valley bottoms: Urban sprawl, Transport, intensive agriculture

Type of pressures:
- Urban sprawl,
- Transport: State roads > 10.000 vehicles/day, train lines, Motorway A22
- Intensive apple orchards (monocultures)

Planning "windows of opportunity" due to changing spatial planning law (since 2020):
- Revision of Provincial Strategic Territorial Plan
- Elaboration of municipal development programs

2 Case study objectives

- Overall goal:
  - identify and protect the most threatened existing corridors in the valley bottoms
  - restore potential corridors in the valley bottoms of South Tyrol
- Tangible output:
  - To elaborate a provincial ecological network design for planning authorities (provincial and municipal) and for spatial planning professionals.
  - Publish spatial data, which can be used by planners

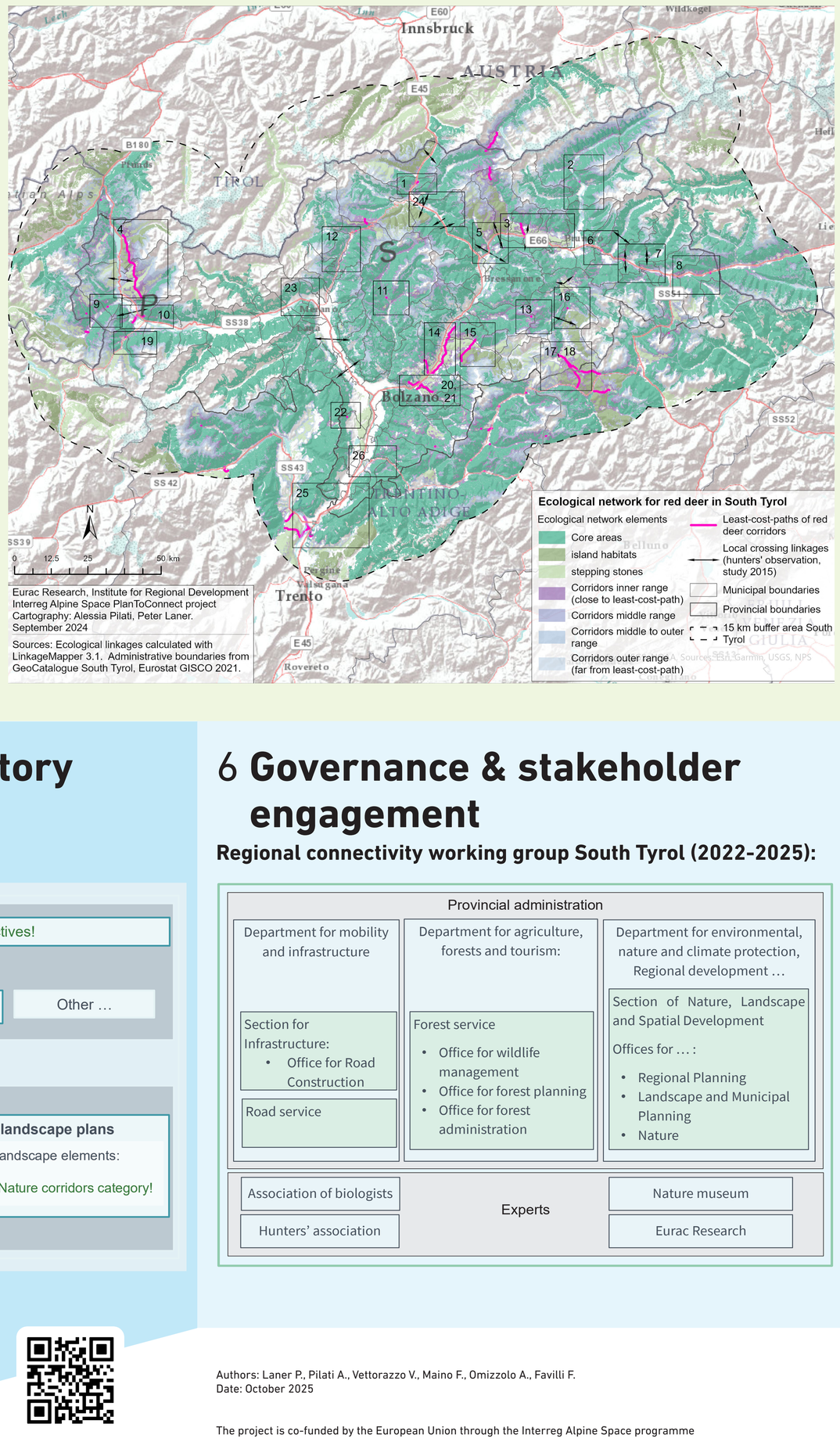
PlanToConnect

3 Methodological approach

Species approach: Red deer ecological network

- Identification of habitat suitability: Land use - land cover, altitude, slope, and distances to roads, motorways, and settlements
- Core areas > 5.000 ha
- The Least cost – path – approach to connect core areas.

Result: 26 focus- areas at local level in valley bottoms, derived from provincial network model

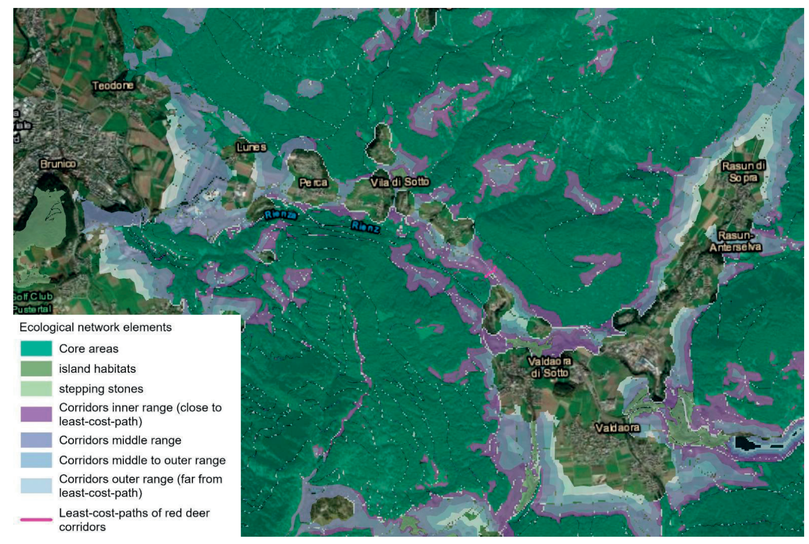


Focus area no° 6, on corridor "Perca – Rasun Anterselva"

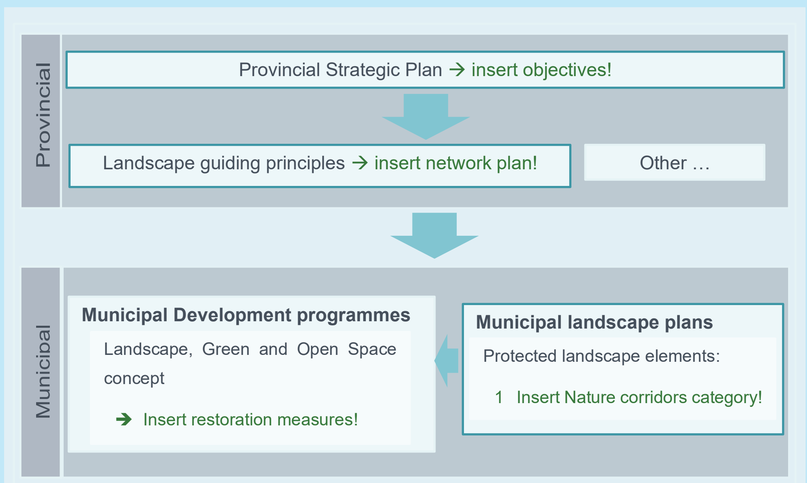
4 Pilot design

- Important corridor at alpine level, threatened by infrastructure development
- Connection of nature parks *Fanes – Sennes – Braies* with *Vedrette di Ries*
- Movement of wild animals on corridor confirmed

Proposed measures to improve connectivity for red deer on corridor 6:
- Evaluate the construction of road overpasses or underpasses
- Protect the corridor in the Landscape Plan
- Add additional linear elements of vegetation cover



5 From concept to statutory plans



6 Governance & stakeholder engagement

Regional connectivity working group South Tyrol (2022-2025):

7 Funding toolbox

- **Provincial landscape fund**
- **Environmental compensation payments from power plants:**
- **Rural Development Program**
- **Private funds. Example "Bee-save" project from regional Bank**

8 Key messages for planners

- Check the method of the model in detail to avoid misinterpretation!
- Go out of the office to check the real situation on the site!
- Talk to provincial administration for clarifications!

9 Next steps / expected impact, after PlanToConnect:

- Precise delineation and protection of priority corridors in municipal landscape plans.
- Definition of more concrete measures for corridor restoration with provincial administration.
- Implementation of pilot projects with monitoring

Authors: Laner P., Pilati A., Vettorazzo V., Maino F., Omizzolo A., Favilli F.
Date: October 2025

The project is co-funded by the European Union through the Interreg Alpine Space programme

eurac research
Institute for Regional Development