

GenRes Bridge Genetic resources for a food-secure and forested Europe

Jade Phillips, Nigel Maxted, University of Birmingham, UK
Marjana Westergren, Hojka Kraigher, Slovenia Forestry Institute, Slovenia
Enrico Sturaro, University of Padova, Italy
Francois Lefevre, INRAE, France
Magda Bou Dagher Kharrat, Pierre Zalloua, University of Saint Joseph, Lebanon
Silvia Perez-Espona, University of Edinburgh, UK
Kjersti Bakkebø, Nina Sæther, **Tor Myking**, NIBIO, Norway

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Demonstration cases for integrated conservation of genetic resources





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Overall aim

- i) Propose **innovative approaches** for the conservation and use of GenRes at the **landscape level** by means of **demonstration cases**, and
- ii) **survey GenRes diversity at European level** for all domains

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We will address three issues

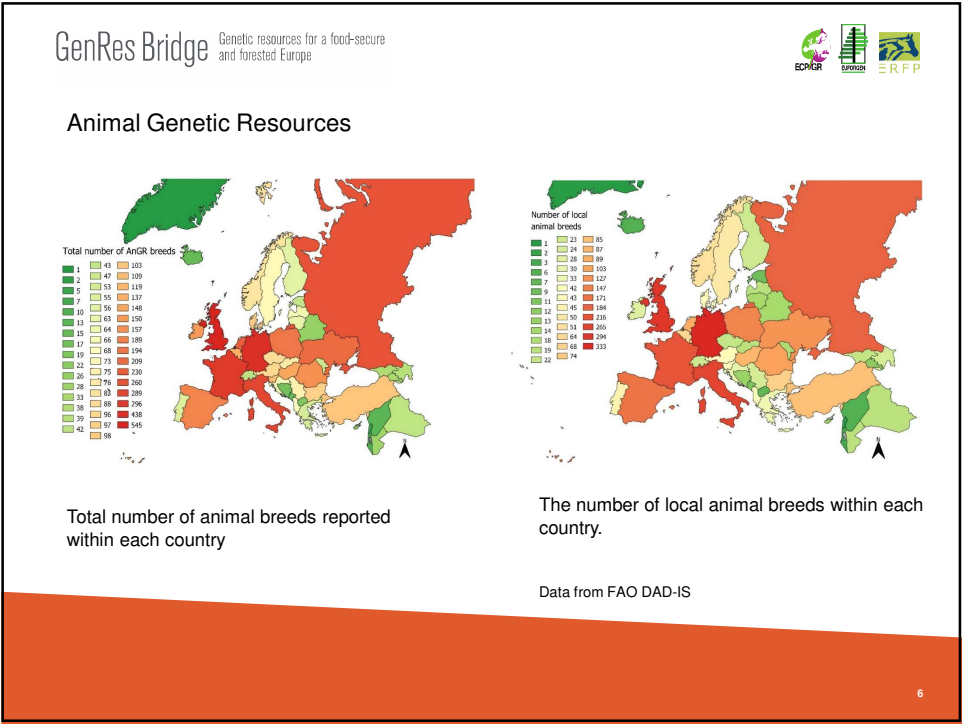
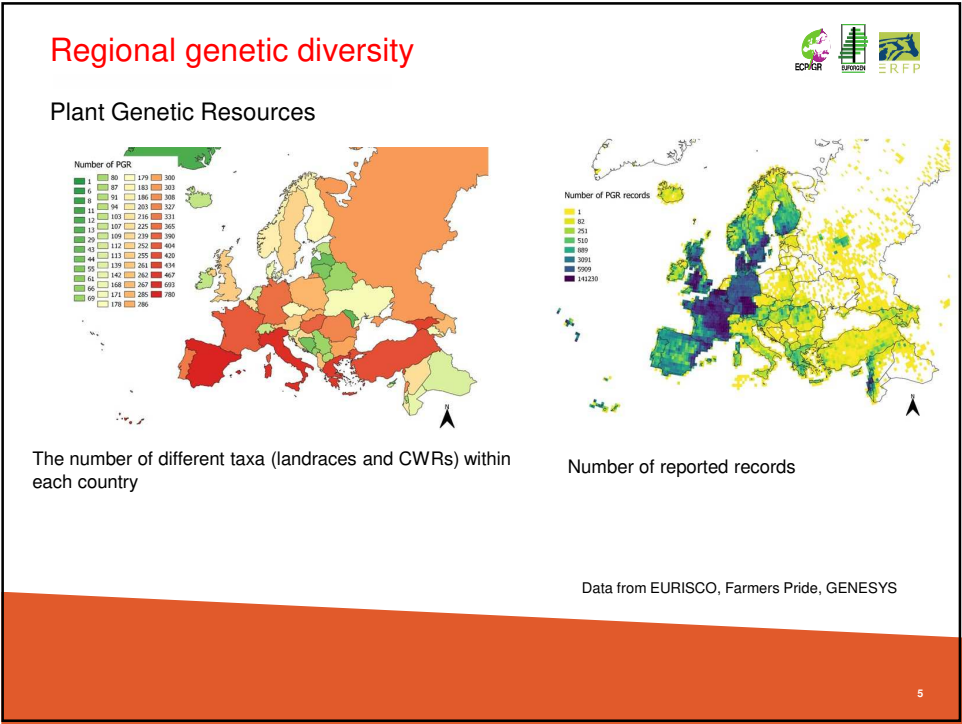
- Regional centres of diversity for all domains
- Demonstration cases
 - Key messages
- Concept for integrated genres conservation

Lebanon

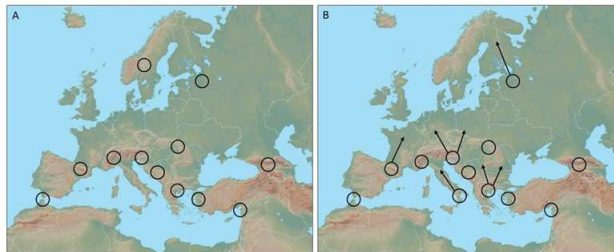
Italy

Norway

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Forest genetic resources



Main areas of high genetic diversity

Locations of main glacial refugia with colonization routes following the last glacial maximum.

Compiled data for many species

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• Conclusions on regional genetic diversity

- Variation in the available data – **difficult to identify areas important for genetic diversity** for all domains
- Identified **gaps** rather than hotspots!
- **Cannot** identify diversity at **landscape level** with present data
- All domains - higher diversity in the **Mediterranean** and those with **heterogenous landscapes**

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Demonstration cases

Legend:
■ GenRes Bridge project area of study
● Location of demonstration cases

Locations marked: Aurland, Mont Ventoux, Dolomites, Triglav, Ehen / Qadisha valley

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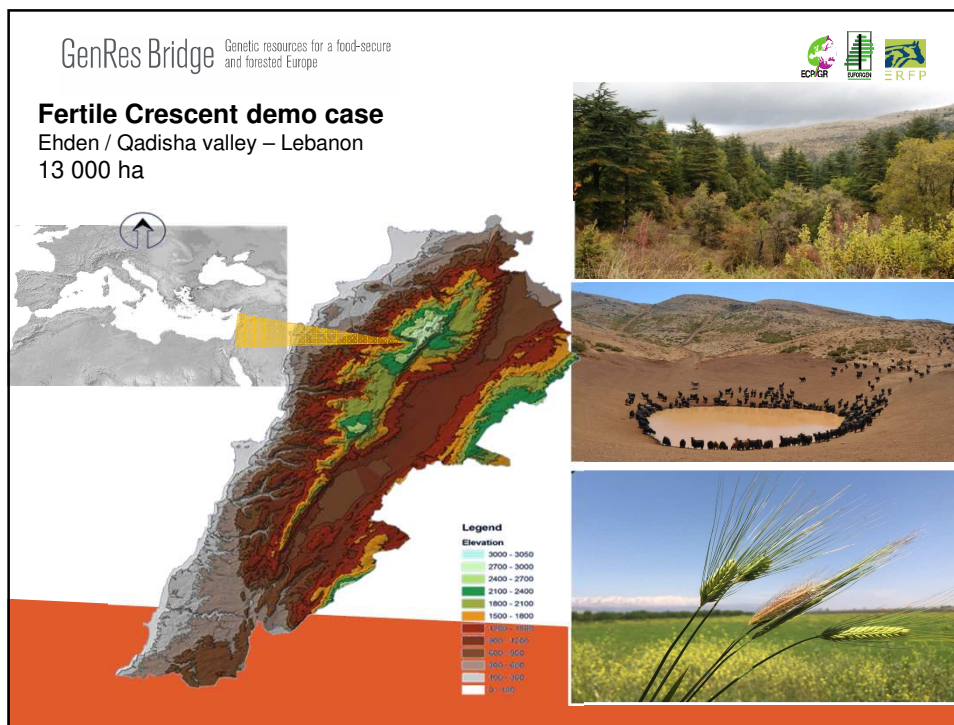
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Methodological approach: list of issues

- Why this demonstration case
- Landscape and agricultural history
- The diversity of genetic resources
- Management, past and contemporary
- Interdependencies between domains
- Interdependencies between landscape and genetic resources of use
- Wider biodiversity supported by Agro GenRes
- Identification of target messages

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Ehden / Qadisha valley – Lebanon
13.000 ha

Identification of target messages

The GenRes diversity of the Fertile Crescent was the **raw material for (Plant and animal domestication) agriculture** and brought humans to sedentary lifestyle

Forest should be kept open by means of sustainable grazing to keep also CWR growing. In-situ conservation of CWR would ensure these precious genetic resources for future generations.

Production system should be diversified to make use of the reservoir of GenRes diversity found in the area.

GR belong to the cultural heritage of their territory of origin, and, through their diversity, GR are **key factors of economic resilience**.

Alps demonstration cases

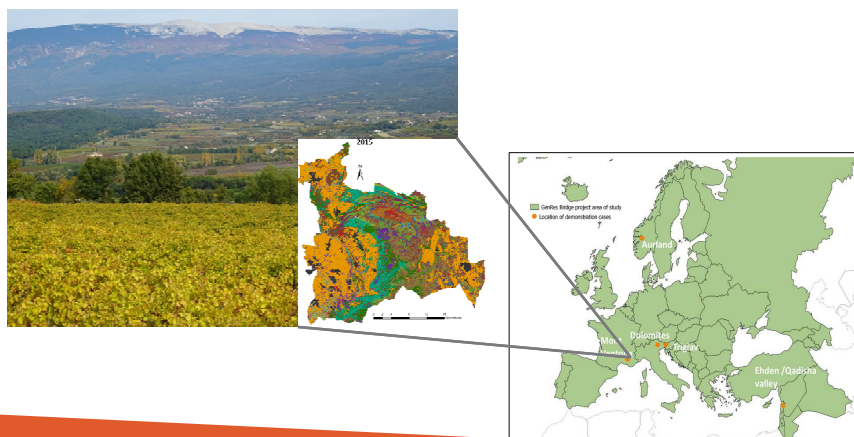
Due to the differences evidenced even at small scale levels across Alps, three areas were selected:

1. Mont Ventoux (France), Western Alps
2. Paneveggio Pale San Martino Natural Park, Dolomites (Italy)
3. Triglav National Park (Slovenia)

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The Mont Ventoux territory - France

91600 ha



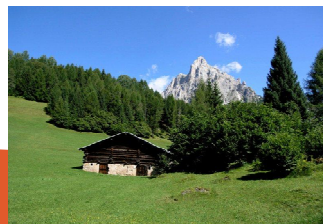
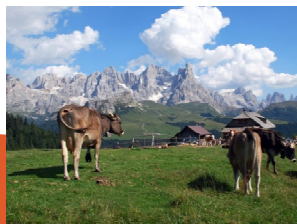
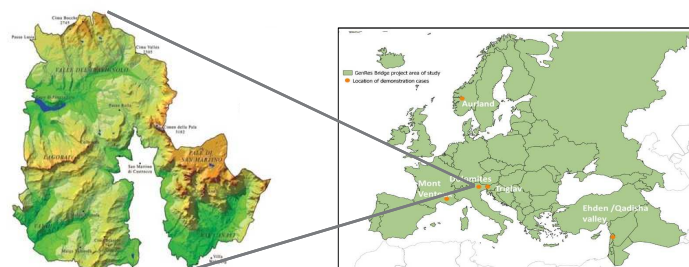
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Identification of target messages

- Genetic resources provide **multiple ecosystem services** and contributions to people;
- Locally specific GR contribute to the **development and cultural identity** of the territory;
- Through their diversity, GR are key factors of **resilience** in the context of changes;
- The interplay of human **interventions and natural processes** drive the continuous evolution of GR diversity;
- Genetic resources are a **living heritage**.

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Dolomites demonstration case: Paneveggio Pale San Martino Park - Italy 19700 ha



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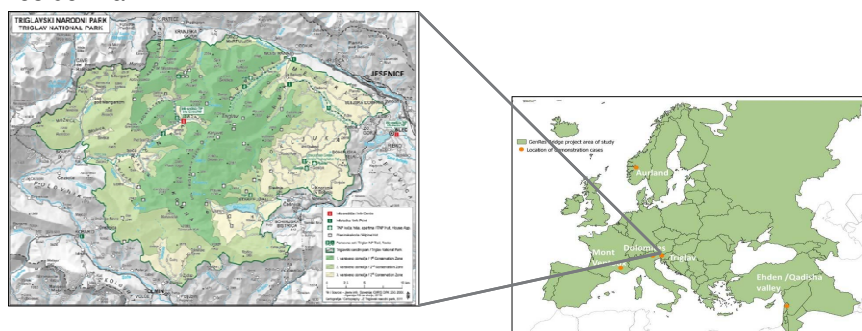
Identification of target messages

- **Strong link** between agroecology practices, GenRes conservation and valorization, and habitats and landscape conservation
- Through their local specificities and adaptations, GenRes belong to the cultural heritage of their origin, and provide **opportunities for local development** and physical material to support the dissemination of local identity
- Agriculture and forest conservation practices interact to maintain **habitat biodiversity**

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Triglav National Park (Eastern Julian Alps - Slovenia)

83.982 ha



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Identification of target messages

- Traditional **management has shaped the interdependencies** of the natural and cultural heritage, and provides support for wider biodiversity.
- Genetic resources should be **managed in an integrated way** with involvement of and good communication among different stakeholders.
- Assessment and/or **long-term economic valuation** and ecosystem services should be assessed to support conservation and management
- Owners and managers of genetic resources in remote and challenging environments need **support** (e.g. branding/labelling, infrastructure, incentives)
- **Research** on genetic resources should be more multidisciplinary

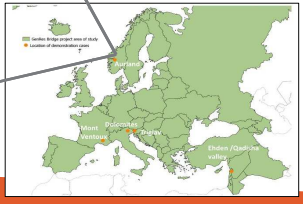
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The Aurland demonstration case - Norway

1 468 000 ha

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Identification of target messages

- **Heterogeneous landscapes** - excellent opportunities for GenRes diversity by multiple sites for agriculture structured along environmental gradients.
- **Wider biodiversity** also capitalises on landscape diversity itself, and by means of the agricultural mosaic it entails.
- **Interdependencies** between GenRes domains (e.g. pollination, forage, landscape openness, fertilisation) - are vital and probably undervalued
- **Complete and diverse value chains** (e.g various dairy products, sausages) based on local GenRes
- **Branding** of high quality local products offers opportunities for maintenance of GenRes diversity.
- **The abandonment** of mountain pastures and farms primarily from the 1950s shows the fragility and dependency of continuous management

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Comparison and conclusions

- Demonstration cases span the local – national – regional scale
- Selection of the demonstration cases represent hotspots of GenRes diversity characteristic of their region
- Mixed status: UNESCO affiliation, IUCN, Natura 2000 sites, High Nature Value Farmlands
- Topographically diverse landscapes (gradients of elevation, land use...) pave the way for diverse GenRes and diverse production systems
- Both local and transboundary breeds
- Study areas with different socio-economic evolutions: it allows to discuss the relationships between “human dimension” and conservation of genetic resources

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A CONCEPT FOR INTEGRATED GENRES CONSERVATION

A **European network** of **Genetically Diverse Landscapes**:
a landscape which has been identified as containing important
GenRes for food and agriculture

Integrated GenRes conservation is **complementary to domain-specific conservation strategies**

Multiple stakeholder engagement throughout the process



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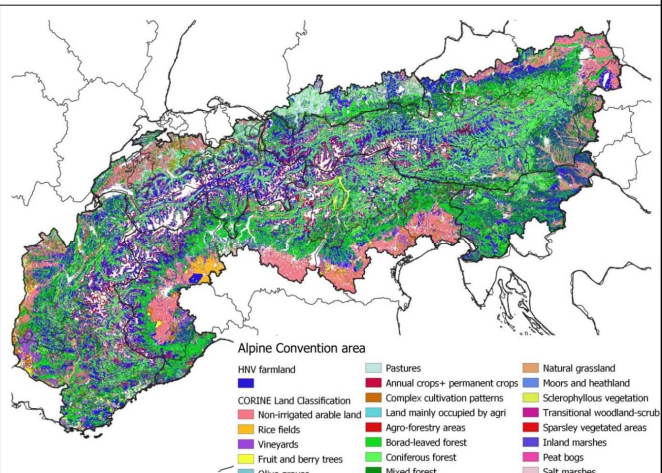
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Heterogenous landscapes:

- Marginal and intensive agricultural land
- Diverse agricultural production systems

Conservation within existing infrastructure:

- Natura 2000 sites
- High Nature Value Farmland
- UNESCO status sites



Alpine Convention area

HNV farmland

CORINE Land Classification

Non-irrigated arable land

Rice fields

Vineyards

Fruit and berry trees

Olive groves

Pastures

Annual crops + permanent crops

Complex cultivation patterns

Land mainly occupied by agri

Agro-forestry areas

Broad-leaved forest

Coniferous forest

Mixed forest

Natural grassland

Moors and heathland

Sclerophyllous vegetation

Transitional woodland-scrub

Sparsely vegetated areas

Inland marshes

Peat bogs

Salt marshes

NATURA 2000

UNESCO

