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

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Webinar on Demonstration cases ahead of the GenRes Bridge Feedback Workshop 25-26 November

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Demonstration cases for integrated conservation of genetic resources

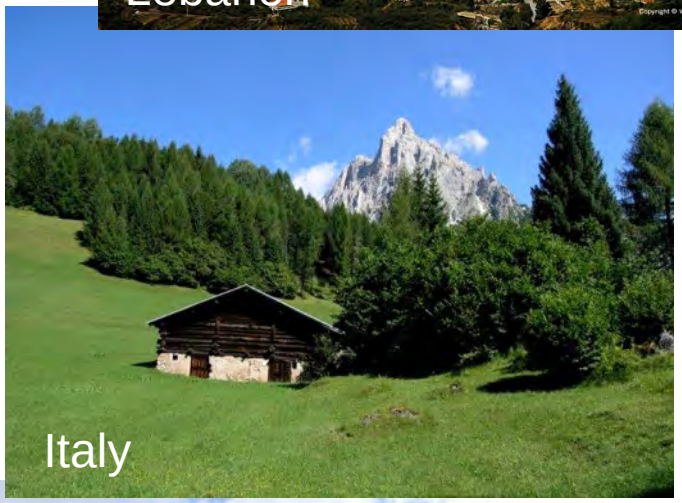
Overall aim

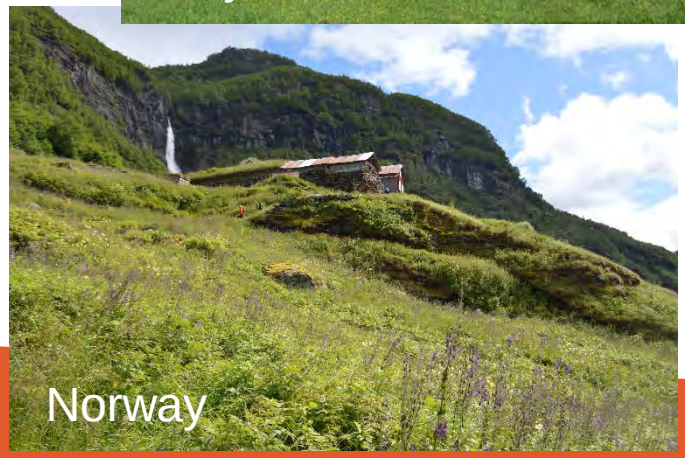
i) Propose innovative approaches for the conservation and use of GenRes at the landscape level by means of demonstration cases, and

ii) survey GenRes diversity at European level for all domains

We will address three issues

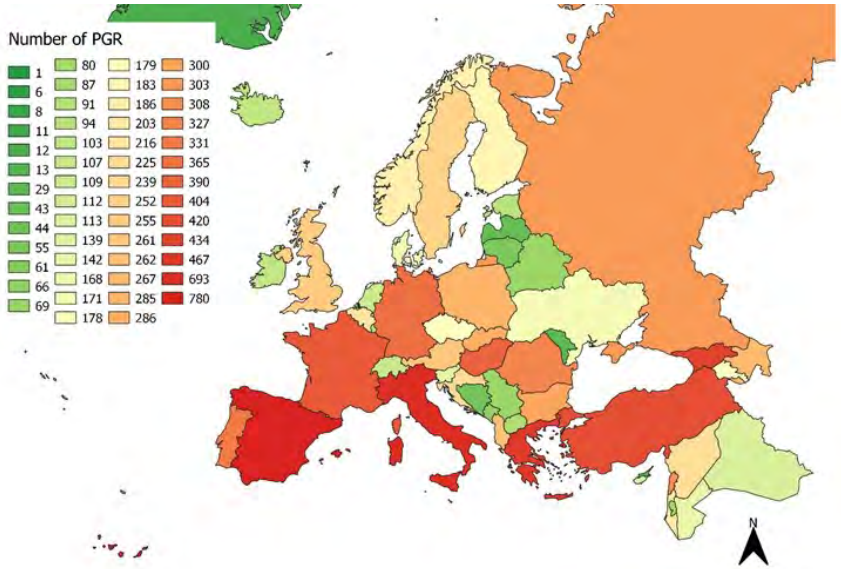
- Regional centres of diversity for all domains
- Demonstration cases
  - Key messages
- Concept for integrated genres conservation



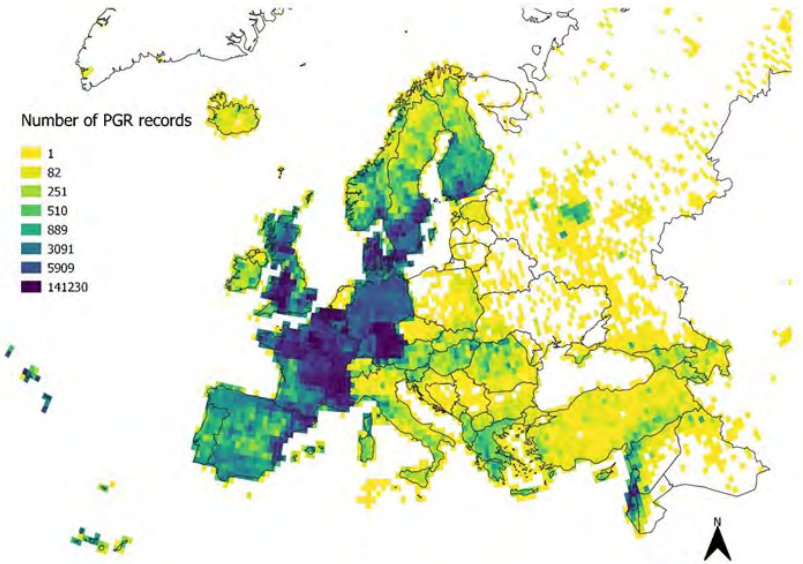


Regional genetic diversity

Plant Genetic Resources



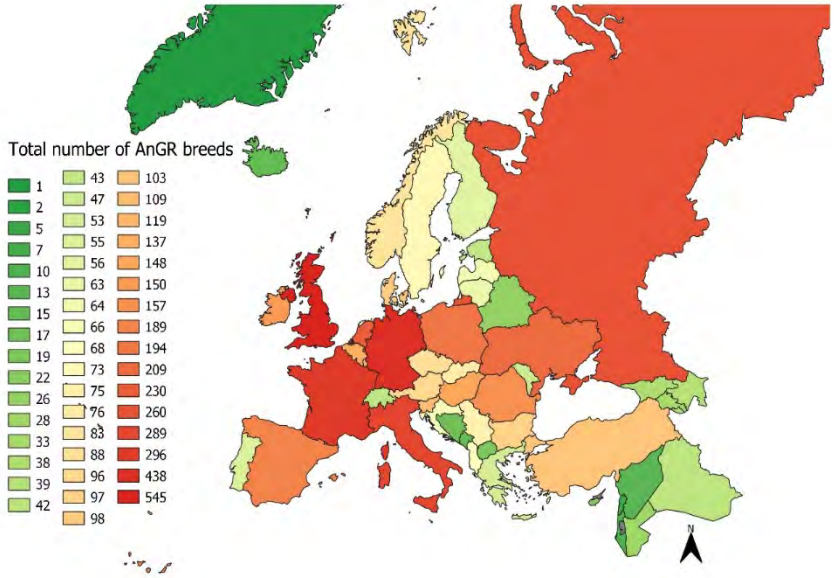
The number of different taxa (landraces and CWRs) within each country



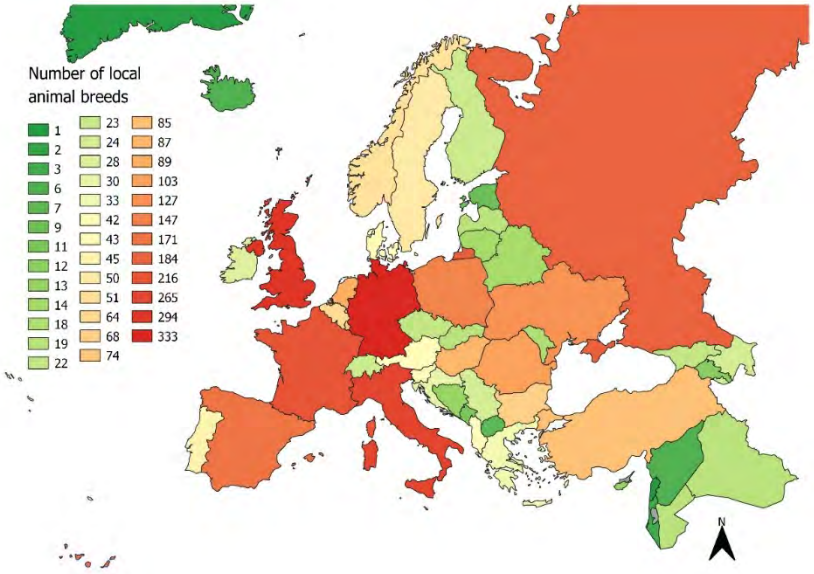
Number of reported records

Data from EURISCO, Farmers Pride, GENESYS

Animal Genetic Resources



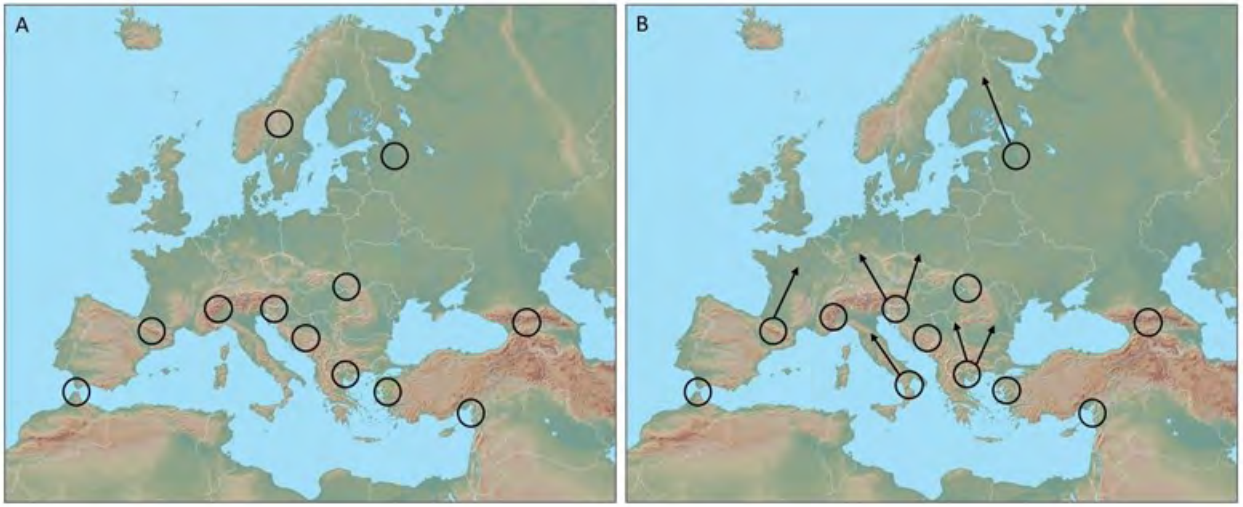
Total number of animal breeds reported within each country



The number of local animal breeds within each country.

Data from FAO DAD-IS

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

- 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

Demonstration cases

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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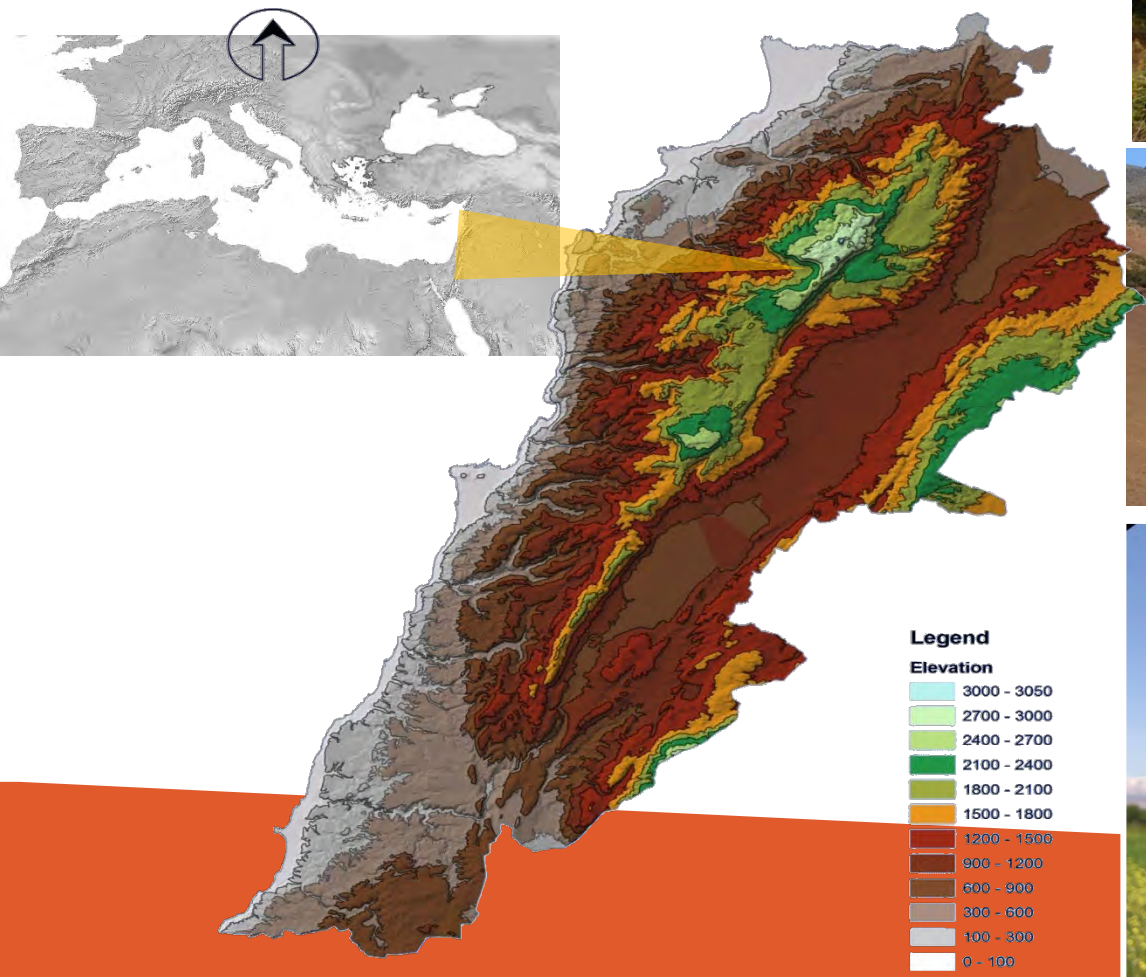
Fertile Crescent demo case

Ehden / Qadisha valley – Lebanon

13 000 ha



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.

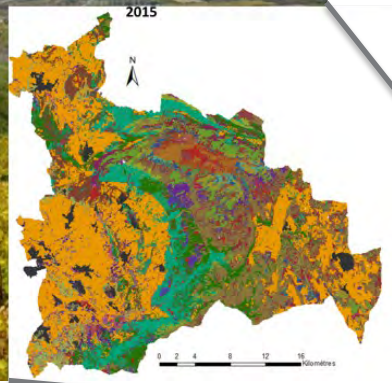
Alps demonstration cases

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)

The Mont Ventoux territory - France

91600 ha

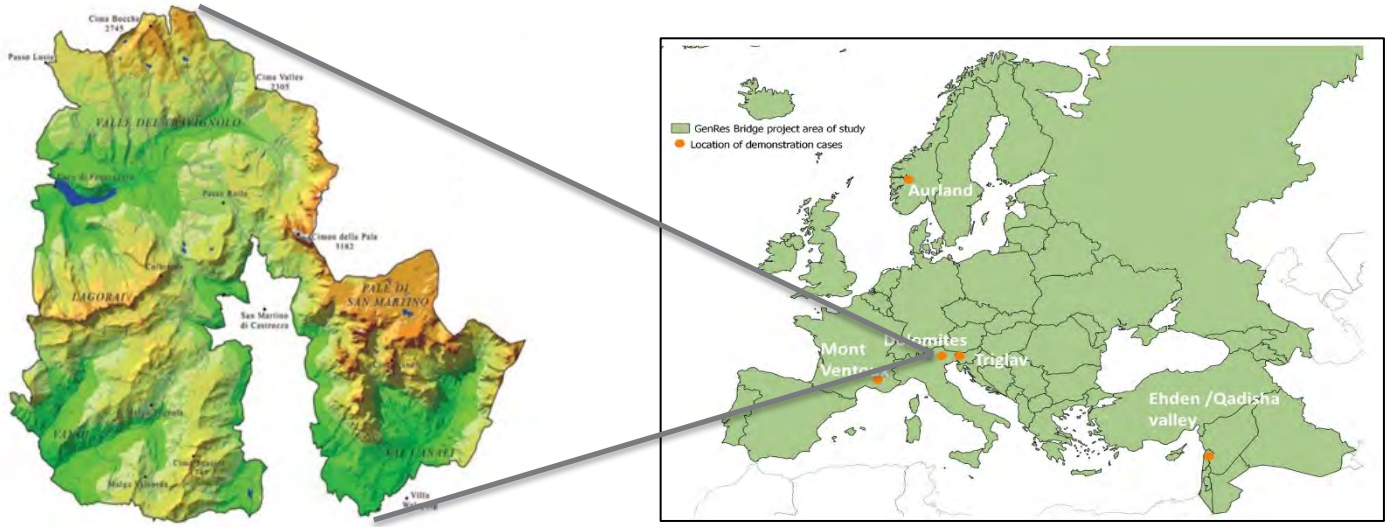


Identification of target messages

- 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.

Dolomites demonstration case: Paneveggio Pale San Martino Park - Italy

19700 ha

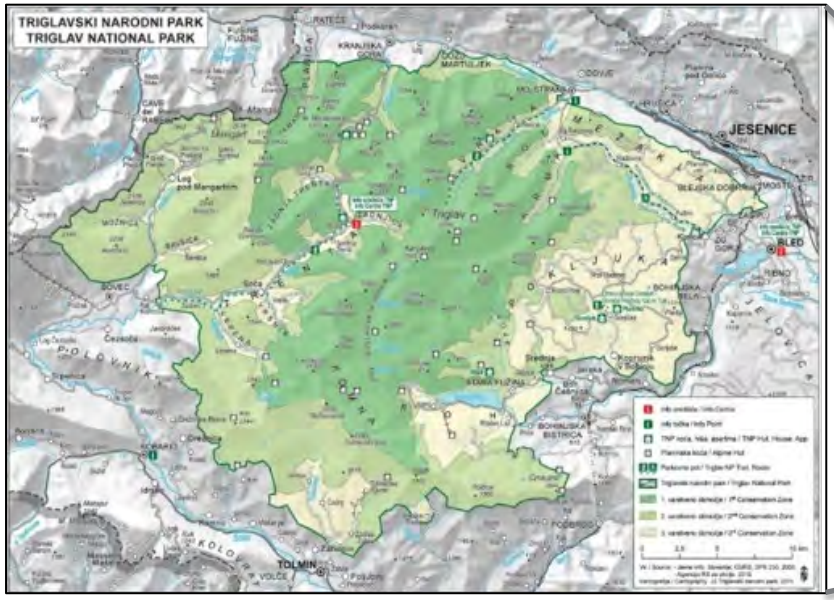


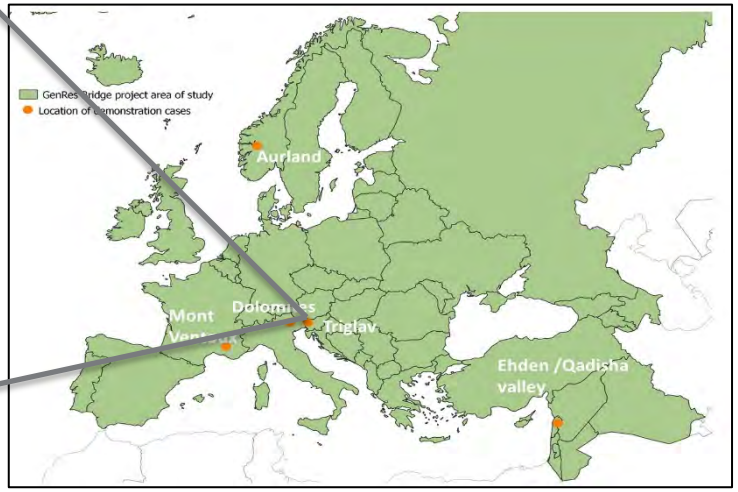
Identification of target messages

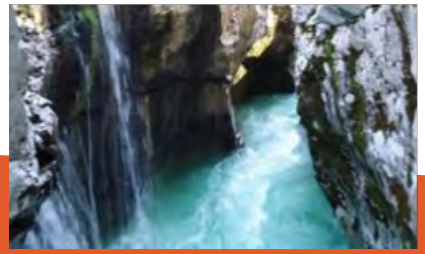
- Strong link between agroecology practices, GenRes conservation and valorization, and habitats and landscape conservation
- Through their local specificities and adaptations, GenRes belong to the cultural heritage of their origin, and provide opportunities for local development and physical material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

Triglav National Park (Eastern Julian Alps - Slovenia)

83.982 ha







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

The Aurland demonstration case - Norway

1 468 000 ha

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

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

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

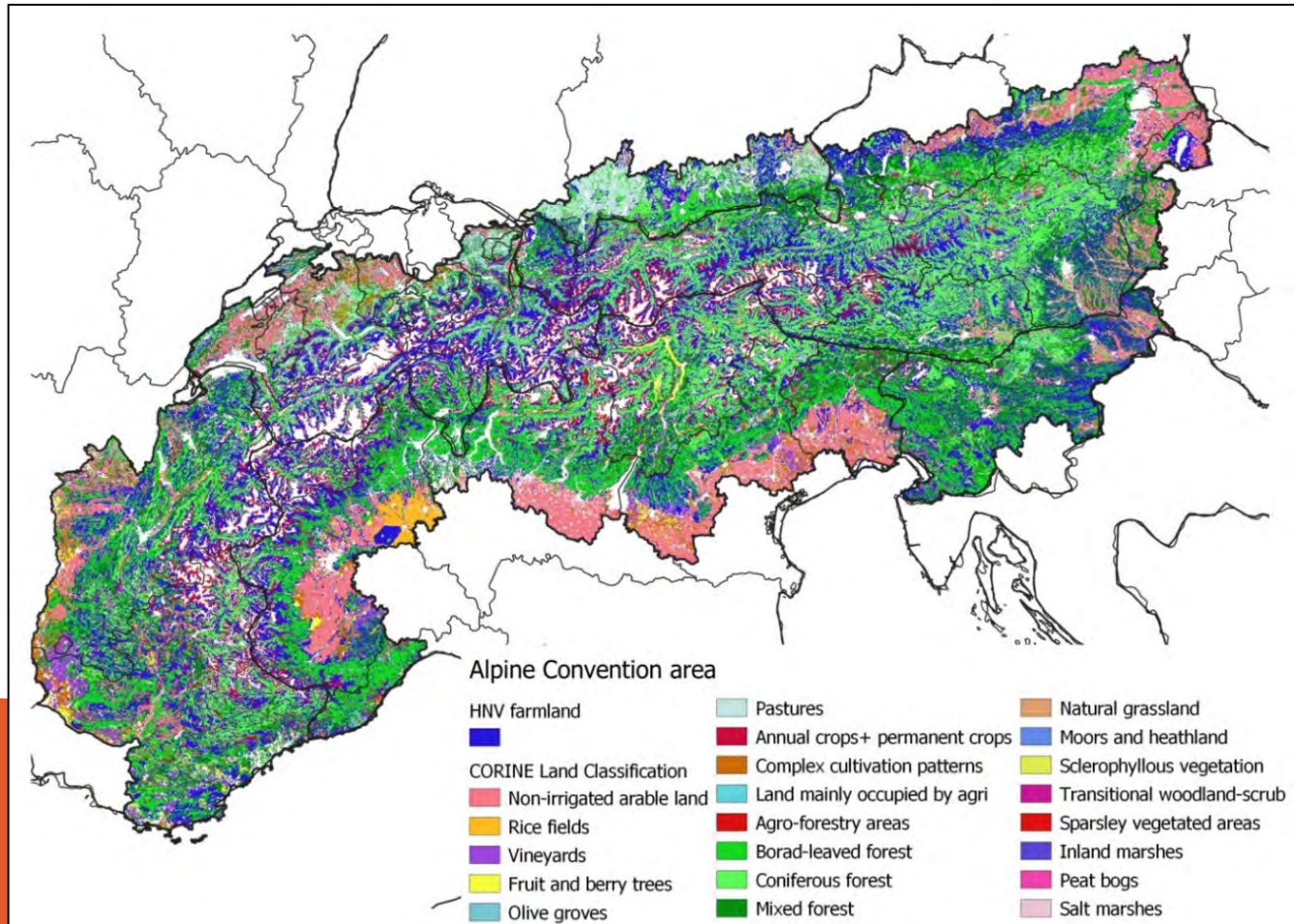
WHERE

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



HOW

Top down policy: EU Green Deal

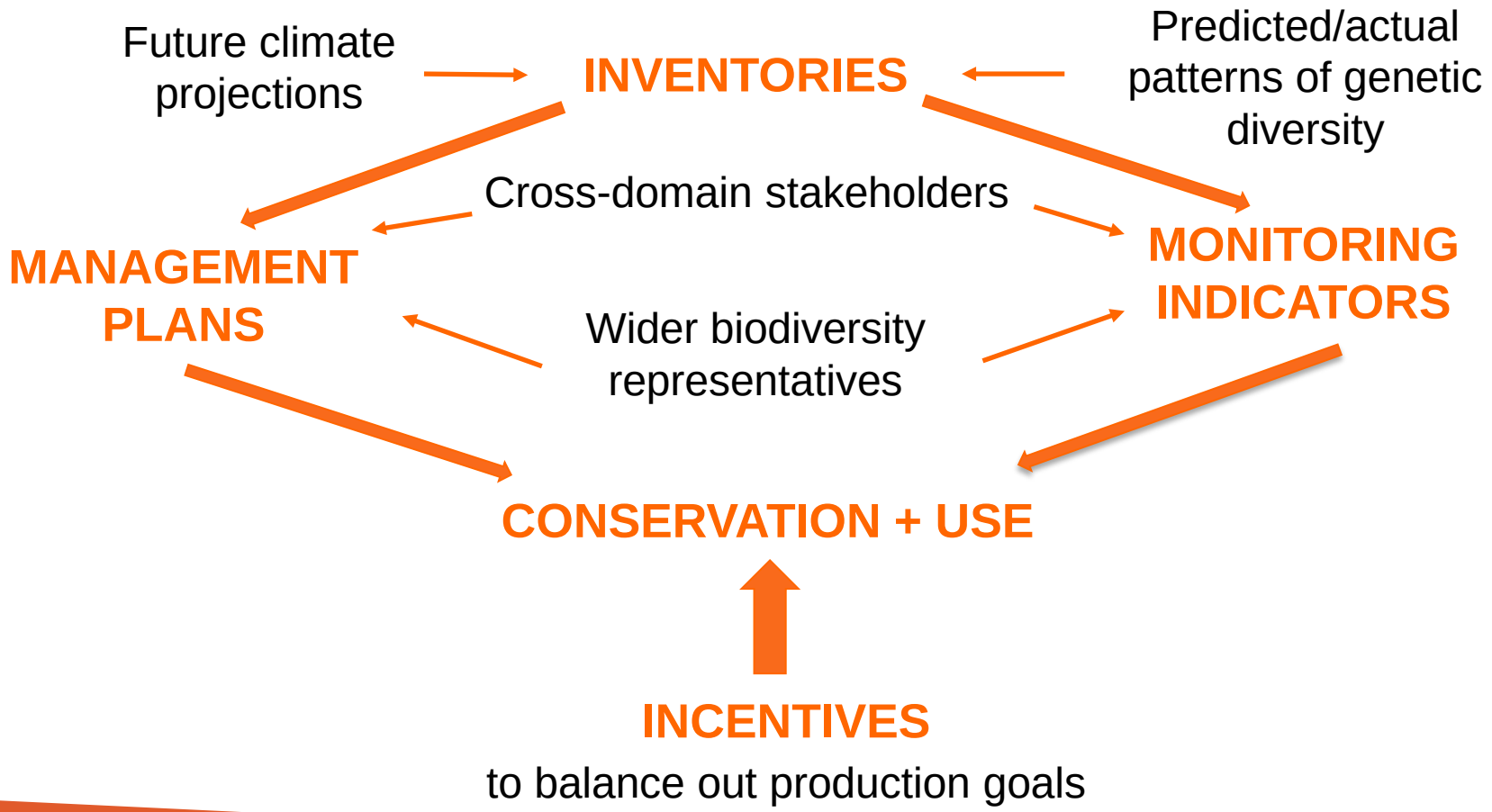
- 10% of agricultural land under “high diversity landscape features”
- Common Agricultural Policy

National level: agricultural and forestry authorities to identify cross-domain landscapes

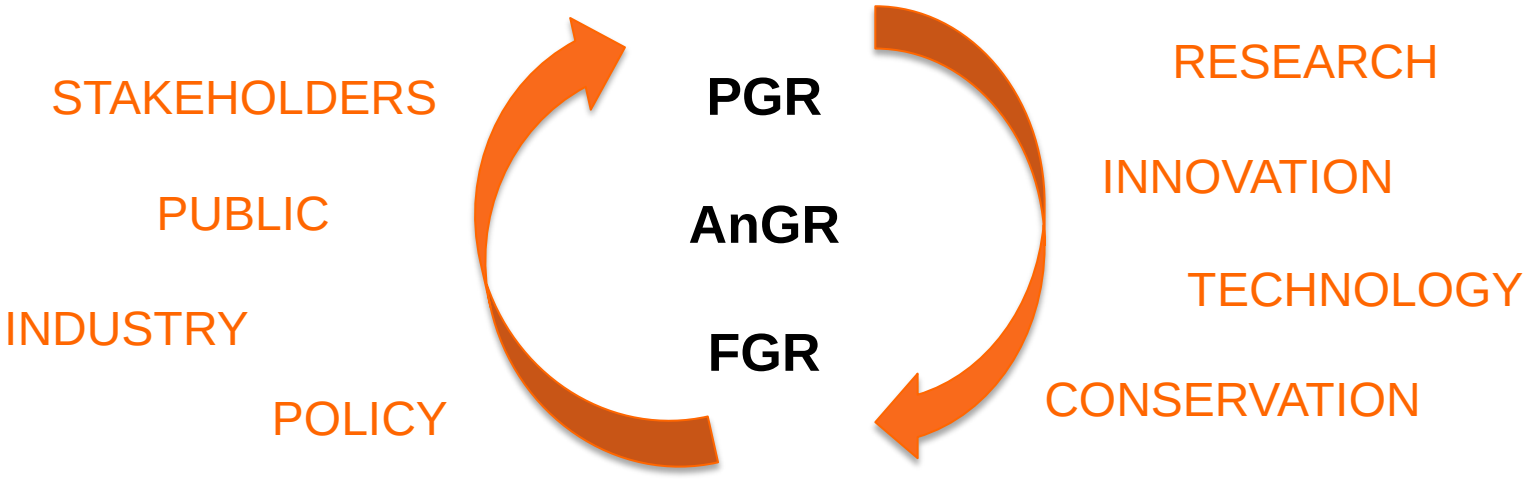
Local level: initiative and knowledge from local stakeholders

- Local stakeholders are key drivers of on-the-ground conservation >see Demo cases

HOW


Future climate projections
INVENTORIES
Predicted/actual patterns of genetic diversity
Cross-domain stakeholders
MANAGEMENT PLANS
MONITORING INDICATORS
Wider biodiversity representatives
CONSERVATION + USE
INCENTIVES
to balance out production goals

KNOWLEDGE GAPS



- How does the GenRes of different domains depend one on the another?
- Which production systems are suited to GenRes conservation?
- How will GenRes and agroecosystems interact and react to the changing climate, changing land-use?

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ECP/GR EUFORGEN ERFP

A CONCEPT FOR INTEGRATED GENRES CONSERVATION

GENETICALLY DIVERSE LANDSCAPES for CONSERVATION and SUSTAINABLE USE of GENETIC RESOURCES