

# **GRACE-RI PGR Access and Capacity building**

---

**Sandra Goritschnig, ECPGR**

PRO-GRACE Workshop

Chania, 09 October 2025

# Session 5 PGR ACCESS AND CAPACITY BUILDING

- 9:00-9:20      *Current status of Access to PGR for research in Europe*  
Sandra Goritschnig (ECPGR)
- 9:20-9:40      *Opportunities for supporting ethical, legal and societal issues in the PGR community*  
Leire Escajedo (CSIC) and Imke Thormann (BLE)
- 9:40-9:55      *Managing phytosanitary risks in germplasm collections*  
Wuu-Yang Willie Chen (WorldVeg)
- 09:55-10:15      *Building capacity of stakeholders in PGR conservation and use*  
Vojtech Holubec (CARC)
- 10:15-10:30      *Examples of capacity building: Genebank peer reviews*  
Dagmar Janovská (CARC) and Zoltan Ay (NBGK)
- 10:30-11:00      Q&A

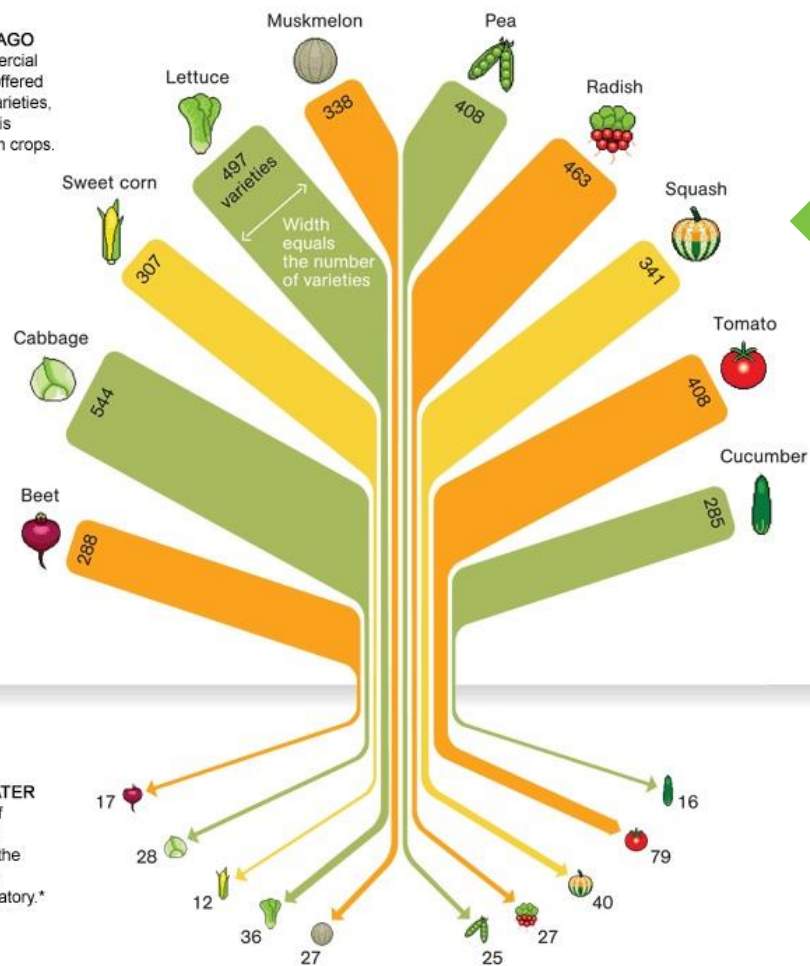




# Current status of Access to PGR for research in Europe



**A CENTURY AGO**  
In 1903 commercial seed houses offered hundreds of varieties, as shown in this sampling of ten crops.



\* CHANGED ITS NAME IN 2001 TO THE NATIONAL CENTER FOR GENETIC RESOURCES PRESERVATION

JOHN TOMANIO, NGM STAFF. FOOD ICONS: QUICKHONEY  
SOURCE: RURAL ADVANCEMENT FOUNDATION INTERNATIONAL

## Genetic erosion:

- Loss of crop varieties in active use by farmers over the past century
- Loss of crop wild relatives in nature, with 16-35% threatened with extinction

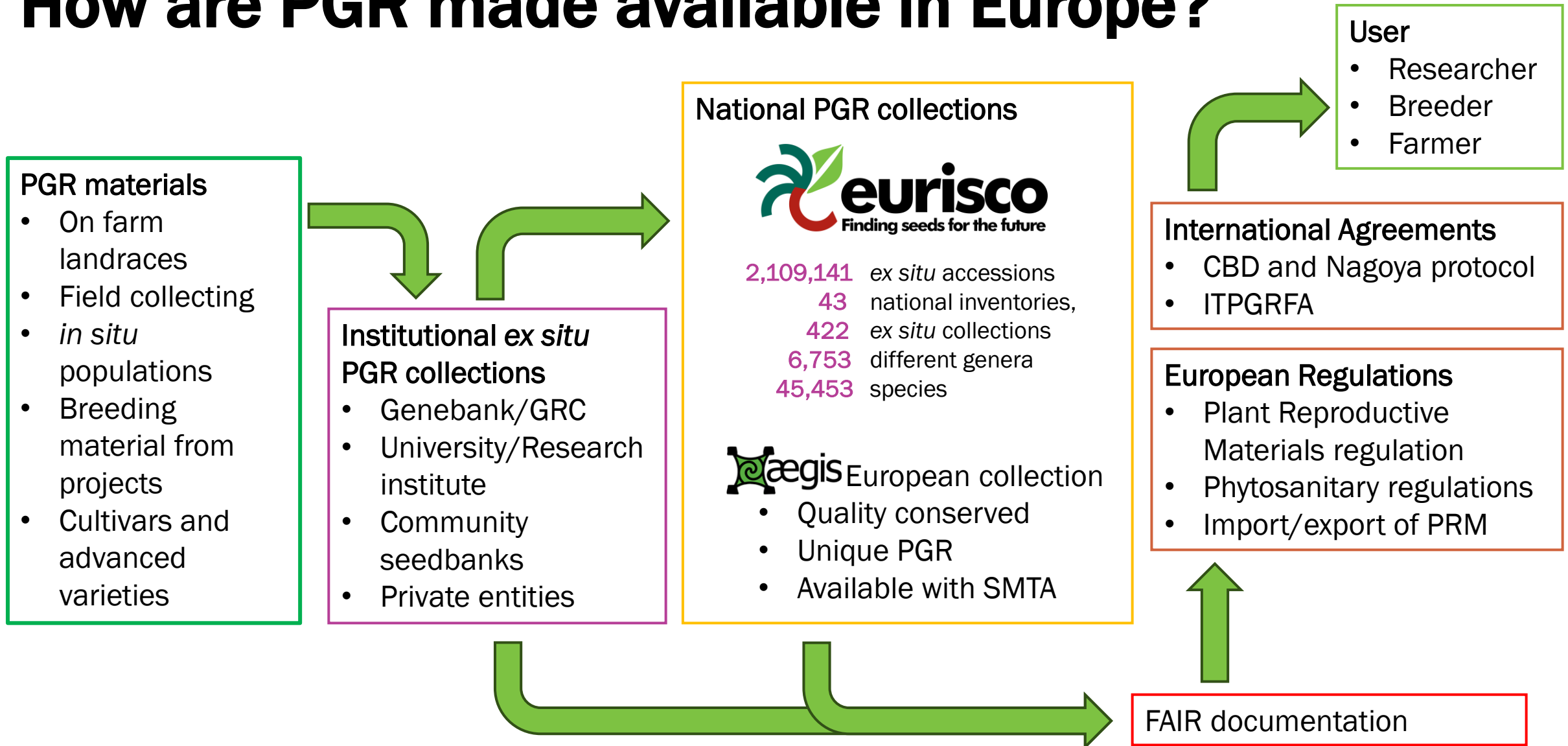
Since ~1920, crop varieties, landraces and wild relatives have been collected in genebanks



Maize conserved at the Portuguese genebank.  
Credit: L. Maggioni

Need to make genebank accessions available to researchers, breeders and farmers!

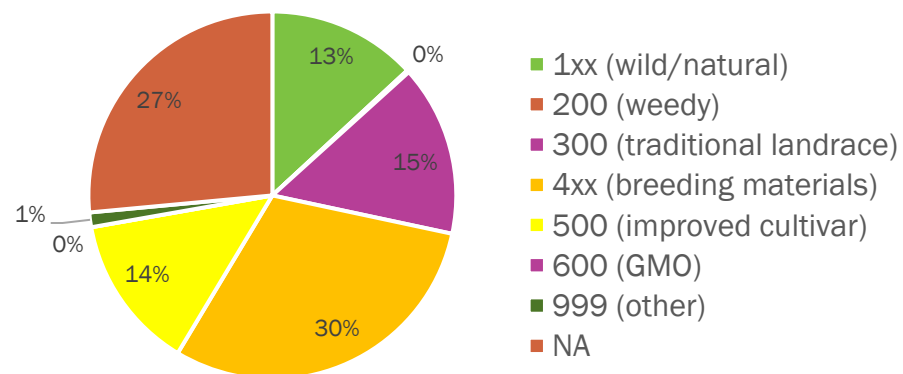
# How are PGR made available in Europe?



# European countries conserve >2M PGRFA accessions documented in 43 national inventories

- **PGRFA** include
  - Wild/natural populations
  - Traditional cultivars/landraces
  - Breeding/research materials
  - Advanced/improved cultivars

Biological status of accessions in EURISCO

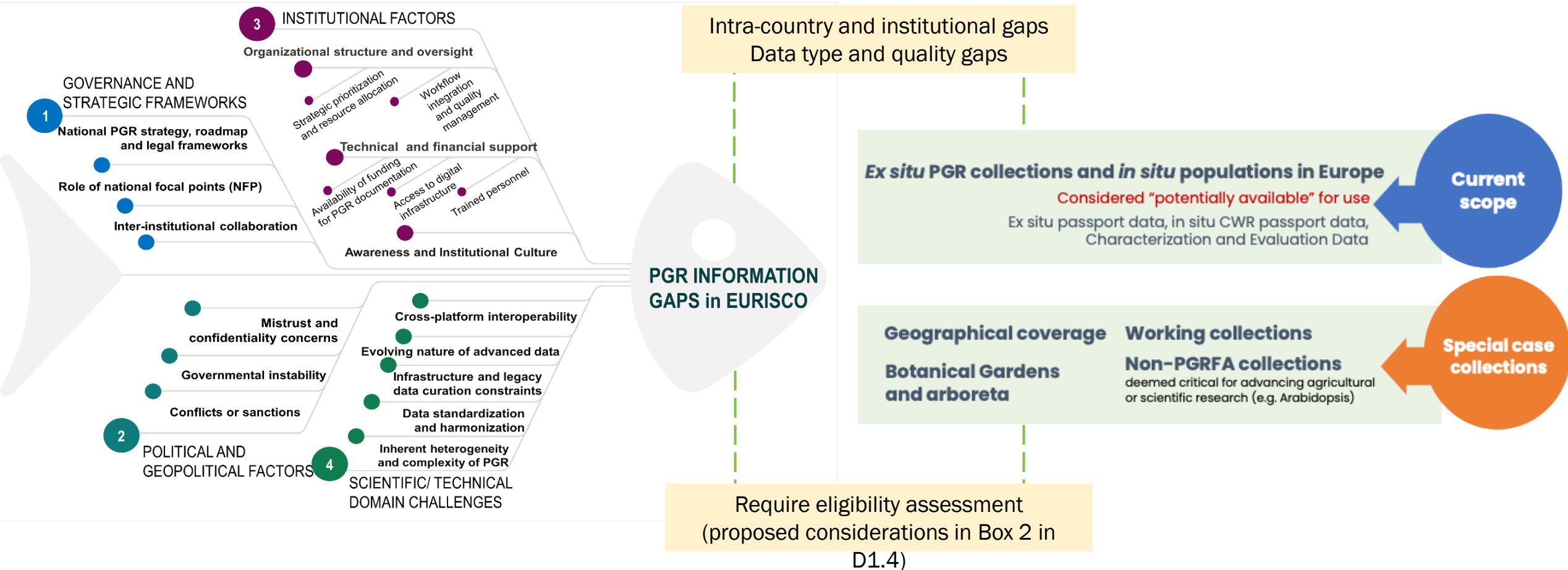


Goritschnig et al., Genetic Resources (S2), 119–134.  
doi: 10.46265/genresj.LUZJ7324.



Circle size corresponding to size of national PGR inventory

# Informations gaps in European PGR collections







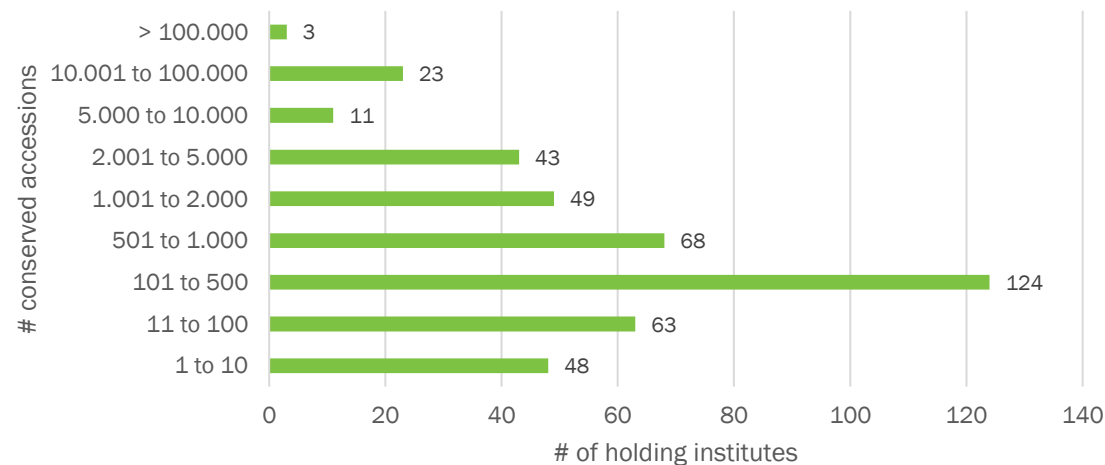
## Strengthening European research cooperation on plant genetic resources conservation and use

Sandra Goritschnig <sup>\*,a</sup>, Stephan Weise <sup>b</sup>, Filippo Guzzon <sup>a</sup>, Lorenzo Maggioni <sup>a</sup>, Theo Van Hintum <sup>c</sup>, Lise Lykke Steffensen <sup>d</sup>, Nils Stein <sup>b,e</sup> and Giovanni Giuliano <sup>f</sup>

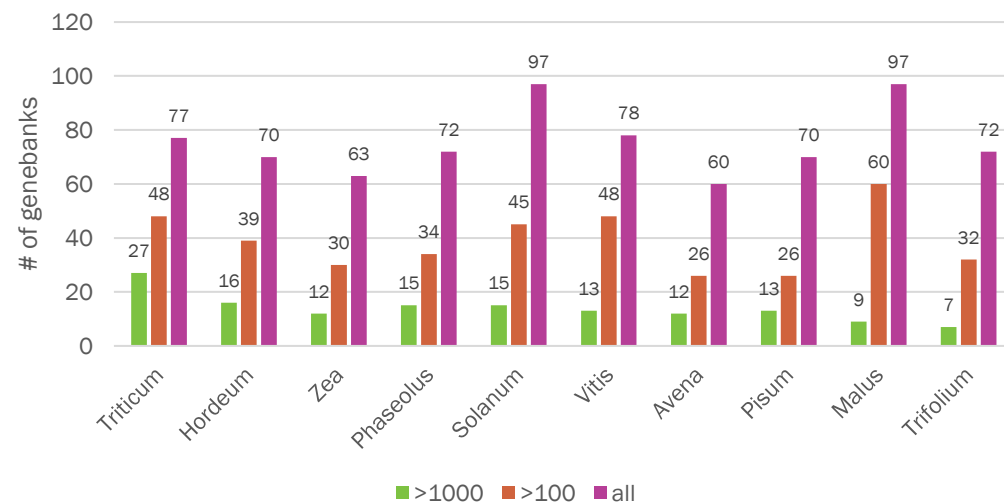
- Most European collections are small (<500 accessions) with high diversity of genera
- Conservation of important genera is highly fragmented with majority of collections <100 accessions

Challenge to include PGR materials from all collections in research

Size of European PGR collections



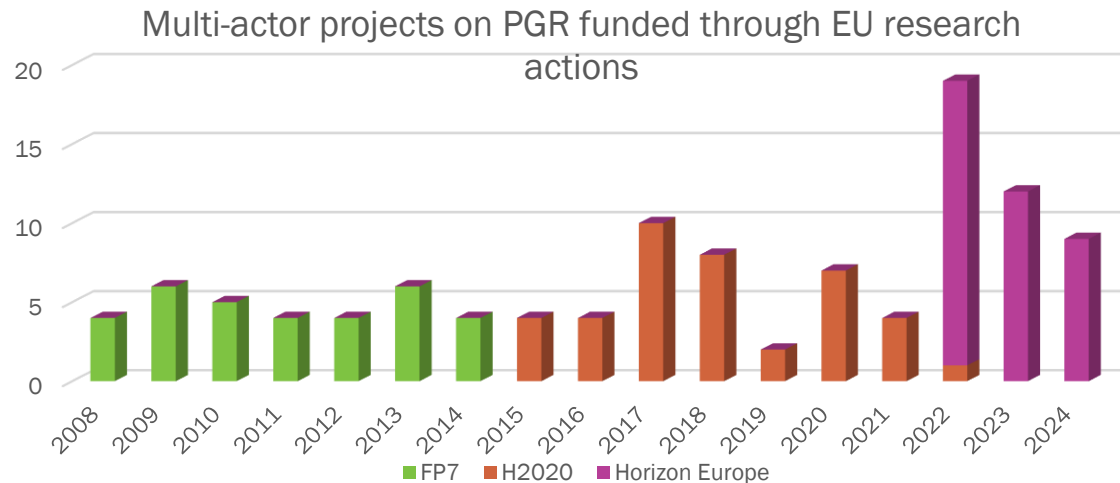
Collections of the most common crop genera in EURISCO





# European research on Plant Genetic Resources

- Many **Horizon, national and bilateral projects** are doing research on PGR in recent years, generating valuable knowledge



- 76 EURISCO institutes in 25 countries have participated in EU-funded research since 2008
- Diverse involvement based on capacity

Goritschnig et al., Genetic Resources (S2), 119–134.  
doi: 10.46265/genresj.LUZJ7324.

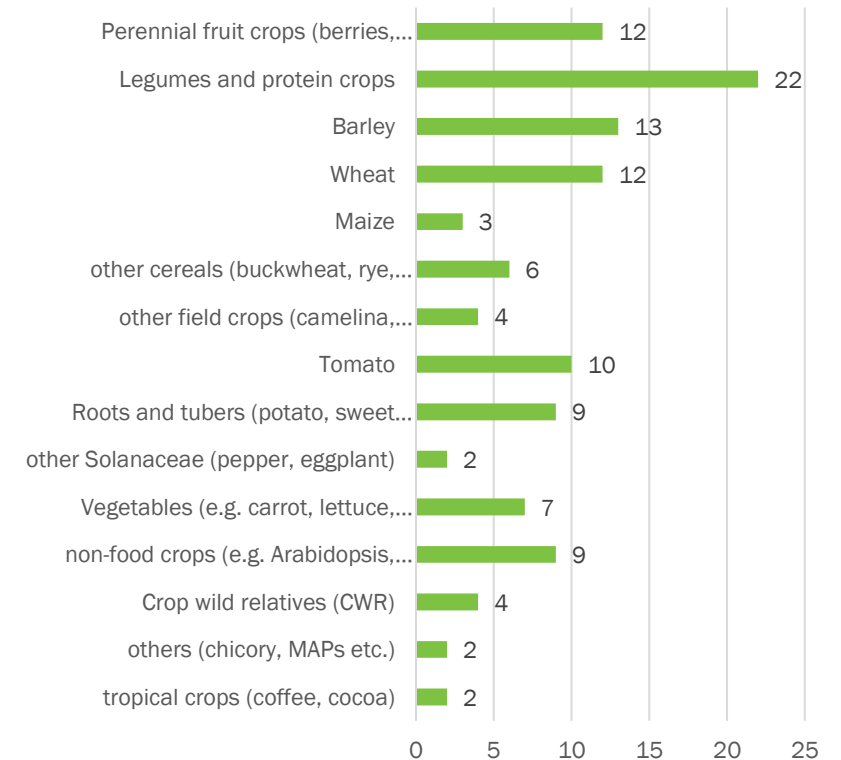


# Constraints to PGR use in breeding

- Commercial breeding uses 90-95% commercial cultivars (500) and only 5-10% non-commercial breeding materials (400), landraces (300) and CWR (1xx)
- Bottlenecks are difficult biology, lack of information and questions on ABS
- ISF reported that since 2006 companies have signed only 10-200 SMTAs overall (CGIAR ca. 100.000 annually!)

**Need more collaborative research on PGR**  
**Need support to navigate the legal framework**

Main PGR studied in EU funded projects



# Improving Access to PGR





# Applying FAIR principles to PGR Access

## Findable

- OA Information systems for passport, C&E and DSI data on PGR facilitate identification of interesting germplasm in existing collections

## Accessible

- Germplasm in collections should be available to interested users under agreed terms
- Quality conservation and sufficient stocks

## Interoperable

- Accession metadata should be complete (MCPD, MI-PGR, pedigrees)
- Clear information on access conditions

## Reusable

- SMTA supports facilitated access under standard conditions within international ABS, allowing reuse in research and breeding

# Challenges for access to PGR

## Collections

- Ensure quality conservation
- Institutional capacity
- Maintain sufficient stocks
- Updated taxonomy
- Documentation
- New (EU) regulations
- Phytosanitary issues

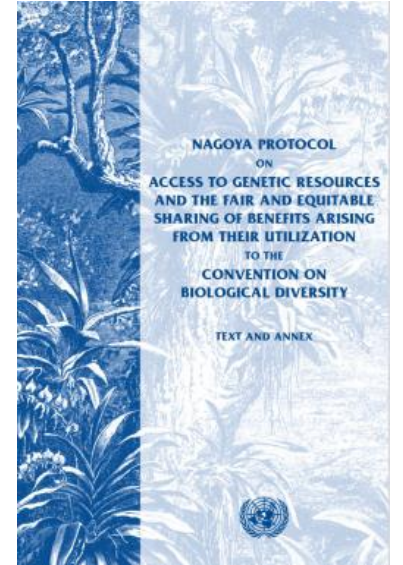
## Users

- Selection of material
- Contacts of collections
- Availability of material
- Access rights and obligations
- Phytosanitary issues
- Implementation of ABS
- Inclusion of DSI in ABS

# International instruments to safeguard PGRFA and biodiversity

- Encourage conservation and facilitated access to PGR
- ABS regime in terms of use of PGR

- CBD (1992; 196 country parties) and
- Nagoya protocol (2014; 142 parties)
  - Any PGR
  - ABS via bilateral agreements
  - 2024 – MLS for DSI (Cali protocol)
- ITPGRFA (2004; 142 parties)
  - Specialized instrument for PGRFA in line with CBD
  - MLS for crops in Annex 1
  - MLS Currently under review



**Convention on  
Biological Diversity**



**The International Treaty**  
ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE



# Revision of EU Regulation on Plant Reproductive Materials



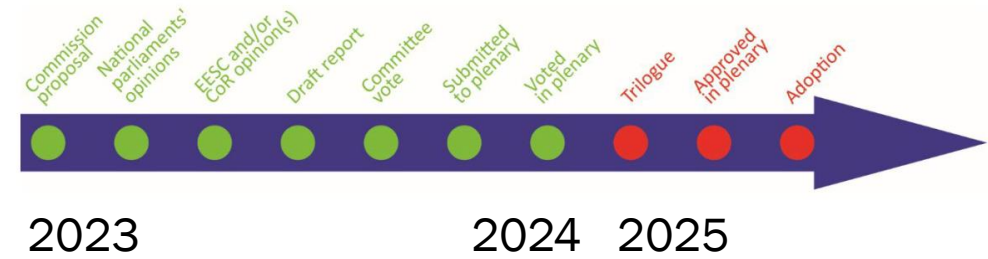
EU PRM legislation, partly dating to 1960s

- Marketing of seeds, cuttings, tubers for plant production
- Registration of varieties
- Plant health and inspection/official controls

The revision seeks to:

- Simplify and align the legal framework;
- Facilitate application of new scientific and technical developments (incl. NGT);
- ensure availability of PRM suitable for future challenges;
- support the **conservation and sustainable use of PGR**;
- harmonise the framework for official controls on PRM;
- improve coherence with plant health legislation.

Timeline of revision:



# Issues in PRM regulation



- Text of first proposal clashed with provisions under ITPGRFA and GPA
  - No distinction between the (highly regulated!) seed marketing and conservation work
  - Restrictions on genebank operations and seed exchange between farmers
- ECPGR and CSB NGOs informed stakeholders and lobbied for amendments
  - Derogations for PGR collections and CSB
  - Differentiate between marketing and conservation

- Lack of knowledge about conservation work among legislators
- Importance of outreach and increasing profile of PGR conservation

# Phytosanitary issues

- Climate change and increased global travel/trade increase the risk of introduction and spread of plant diseases
  - EU regulation 2016/2031 (last updated 2024) provides «effective measures for the protection of the Union's territory and its plants»
    - Lists of pests, commodities and plant health requirements
    - Risk assessments and lists of regulated and high-risk plants
  - Emerging pests may affect genebank operations
    - Emergency measures for ToBRFV in 2019 required testing of all tomato and pepper seeds → e.g. CGN halted distribution and tested all stocks
- 
- **PGR are important resources of resilience to biotic stress and need to remain available for research and breeding**
  - **Genebanks require support to comply with phyosanitary requirements**



# How a GRACE-RI could support access to PGR

## Legal aspects

- Support collections and users in navigating regulations and international agreements
- Support countries in implementing obligations under CBD, ITPGRFA etc. related to PGR
- Support countries to develop national programmes for PGR conservation and use

## Practical aspects

- Support collections to comply with phytosanitary requirements
- Support reporting and monitoring

# Capacity building supports all PGR activities

- Generational shift in PGR curators
- New developments and technologies require enhanced educational offer
- Education and training at all levels, post-secondary and professional
- Networking activities for knowledge exchange and collaboration

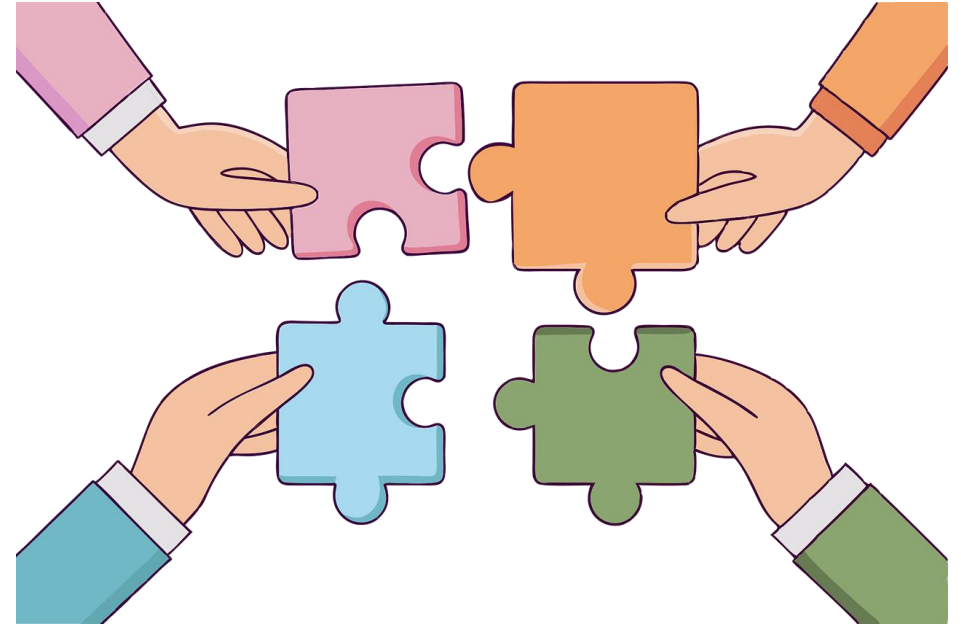


Image by [Franz Bachinger](#) from [Pixabay](#)

Enhanced outreach to general public and policymakers to increase public awareness and political support for PGR

# Session 5 PGR ACCESS AND CAPACITY BUILDING

- 9:00-9:20 *Current status of Access to PGR for research in Europe*  
Sandra Goritschnig (ECPGR)
- 9:20-9:40 ***Opportunities for supporting ethical, legal and societal issues in the PGR community***  
Leire Escajedo (CSIC) and Imke Thormann (BLE)
- 9:40-9:55 ***Managing phytosanitary risks in germplasm collections***  
Wuu-Yang Willie Chen (WorldVeg)
- 09:55-10:15 ***Building capacity of stakeholders in PGR conservation and use***  
Vojtech Holubec (CARC)
- 10:15-10:30 ***Examples of capacity building: Genebank peer reviews***  
Dagmar Janovská (CARC) and Zoltan Ay (NBGK)
- 10:30-11:00 Q&A



# THANK YOU

Sandra Goritschnig

s.goritschnig@cgiar.org

[www.grace-ri.eu/pro-grace](http://www.grace-ri.eu/pro-grace)