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GRACE-RI PGR Access and Capacity building

Sandra Goritschnig, ECPGR

PRO-GRACE Workshop

Chania, 09 October 2025

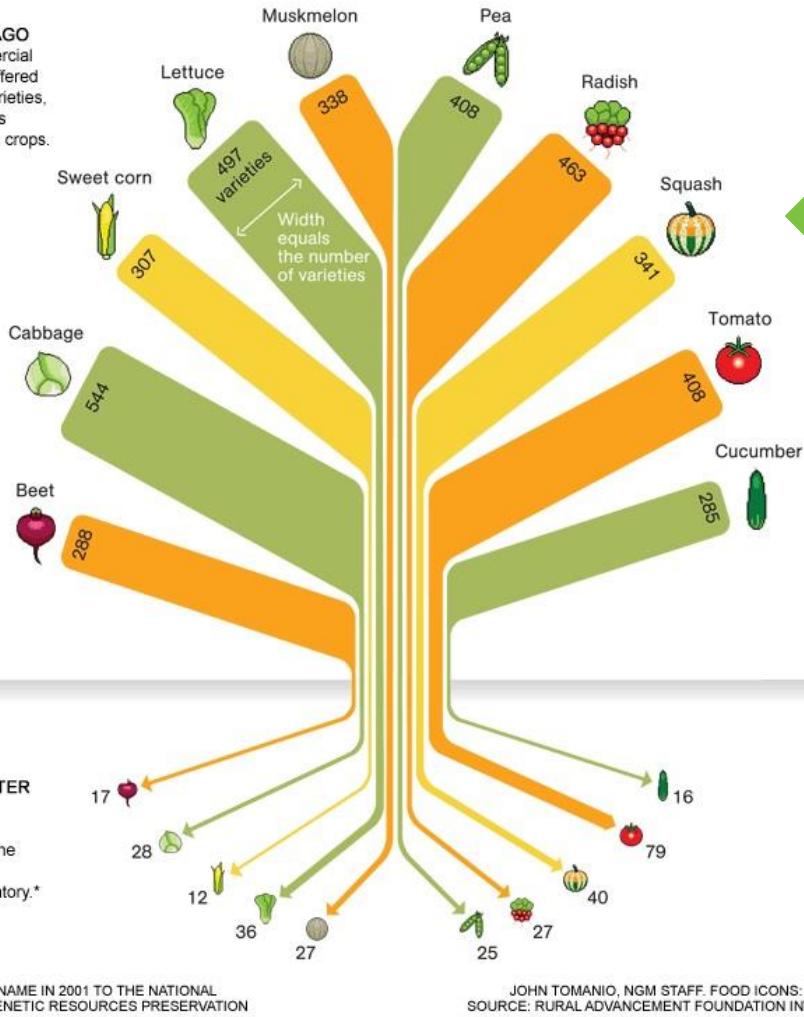
Session 5 PGR ACCESS AND CAPACITY BUILDING

- | | |
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| 9:00-9:20 | <i>Current status of Access to PGR for research in Europe</i>
Sandra Goritschnig (ECPGR) |
| 9:20-9:40 | <i>Opportunities for supporting ethical, legal and societal issues in the PGR community</i>
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| 9:40-9:55 | <i>Managing phytosanitary risks in germplasm collections</i>
Wuu-Yang Willie Chen (WorldVeg) |
| 09:55-10:15 | <i>Building capacity of stakeholders in PGR conservation and use</i>
Vojtech Holubec (CARC) |
| 10:15-10:30 | <i>Examples of capacity building: Genebank peer reviews</i>
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.



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



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

How are PGR made available in Europe?

- PGR materials**
- On farm landraces
 - Field collecting
 - *in situ* populations
 - Breeding material from projects
 - Cultivars and advanced varieties

- Institutional *ex situ* PGR collections**
- Genebank/GRC
 - University/Research institute
 - Community seedbanks
 - Private entities

National PGR collections



2,109,141 ex *situ* accessions
43 national inventories,
422 ex *situ* collections
6,753 different genera
45,453 species



aegis European collection
• Quality conserved
• Unique PGR
• Available with SMTA

User

- Researcher
- Breeder
- Farmer

International Agreements

- CBD and Nagoya protocol
- ITPGRFA

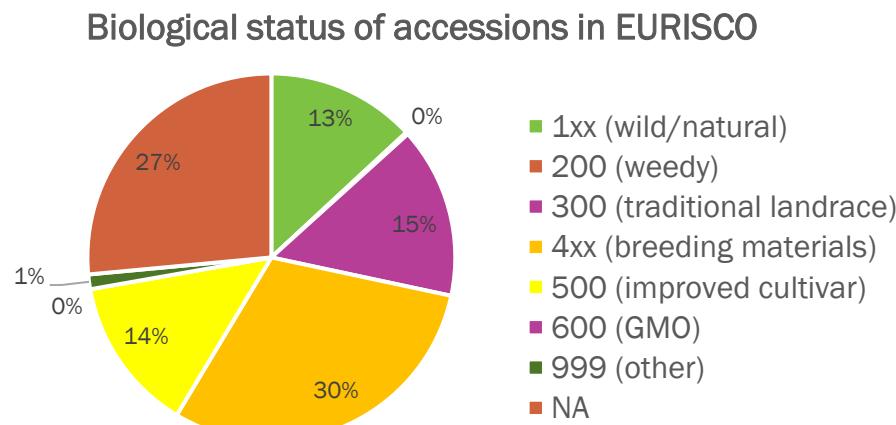
European Regulations

- Plant Reproductive Materials regulation
- Phytosanitary regulations
- Import/export of PRM

FAIR documentation

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

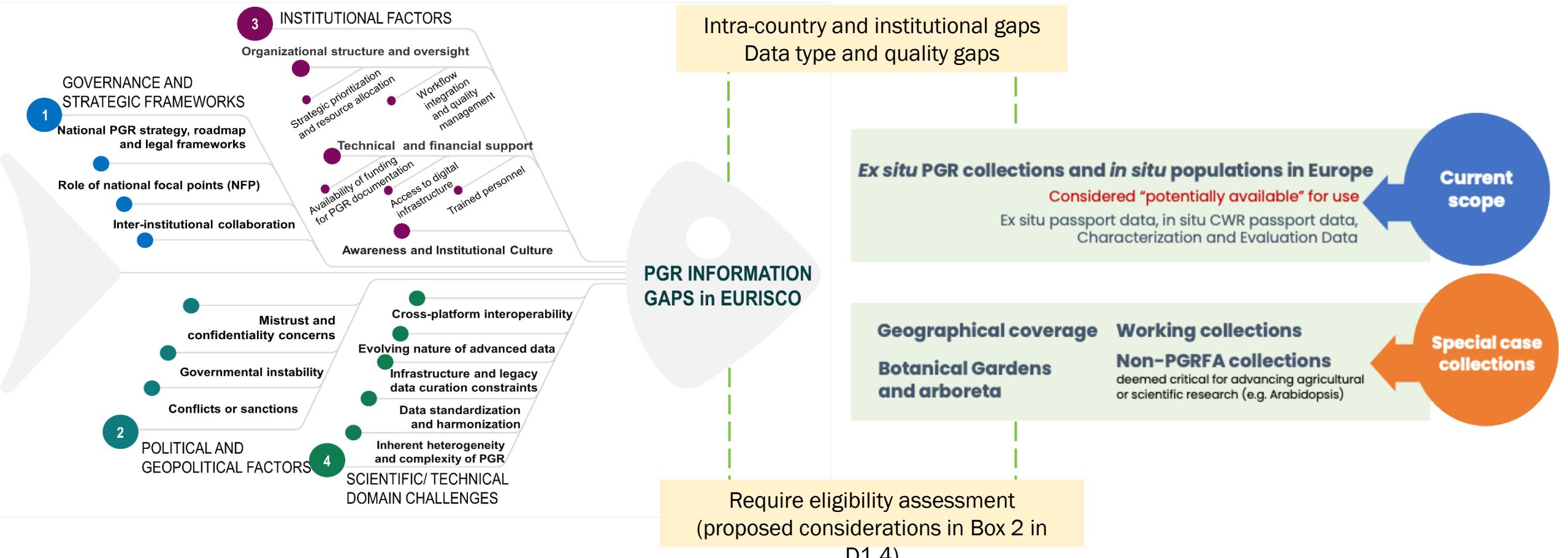


Goritschnig et al., Genetic Resources (S2), 119–134.
doi: 10.46265/genresj.LUZJ7324.



Circle size corresponding to size of national PGR inventory

Informations gaps in European PGR collections

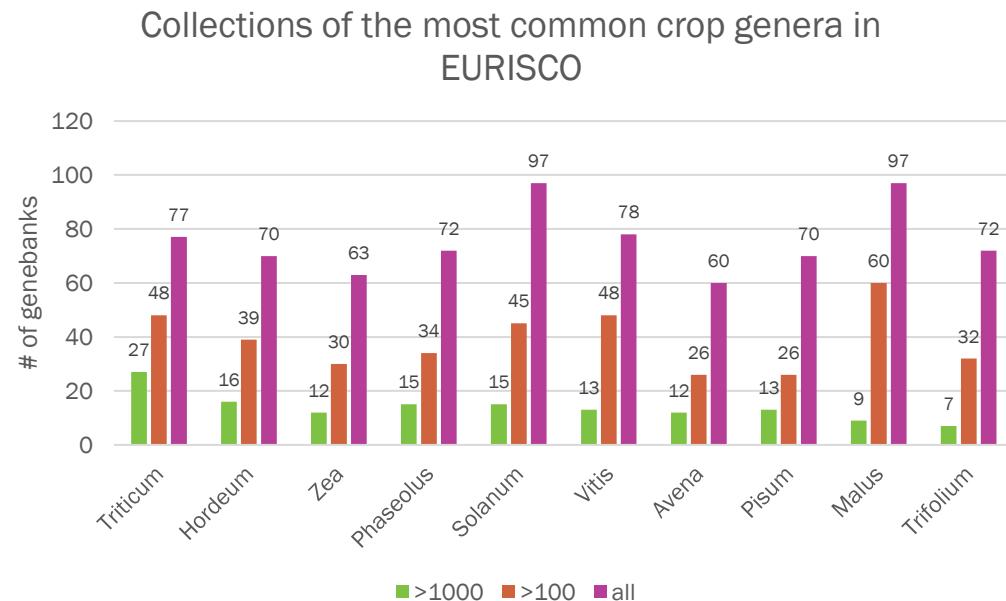
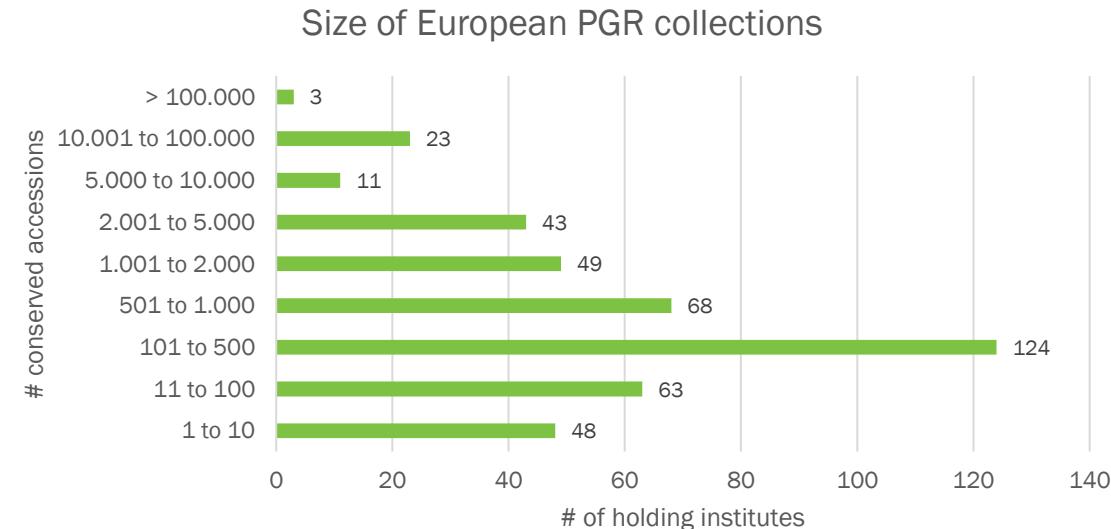


Strengthening European research cooperation on plant genetic resources conservation and use

Sandra Goritschnig ^{a,*}, Stephan Weise ^b, Filippo Guzzon ^a, Lorenzo Maggioni ^a, Theo Van Hintum ^c, Lise Lykke Steffensen ^d, Nils Stein ^{b,e} and Giovanni Giuliano ^f

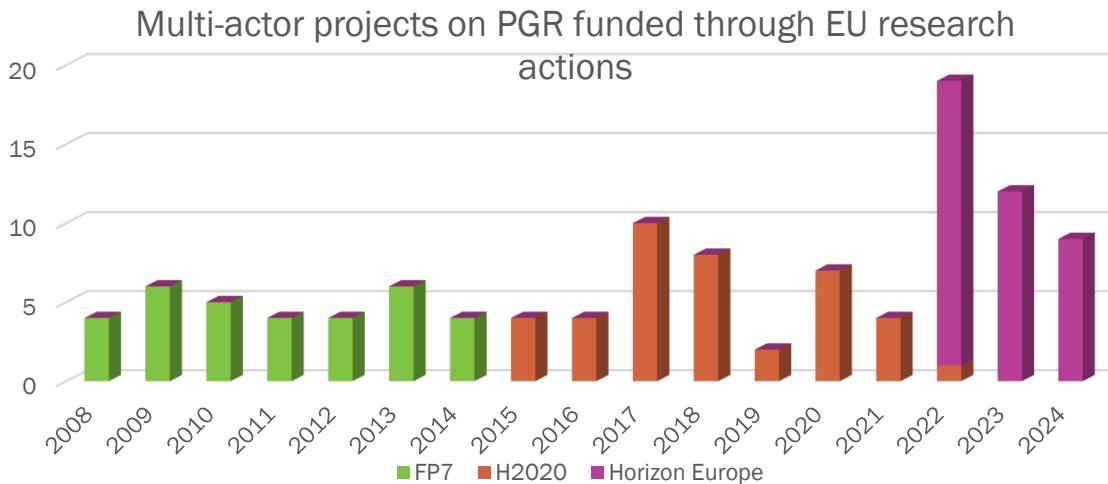
- Most European collections are small (<500 accessions) with high diversity of genera
- Conservation of important genera is highly fragmented with majority of collections <100 accessions

Challenge to include PGR materials from all collections in research



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

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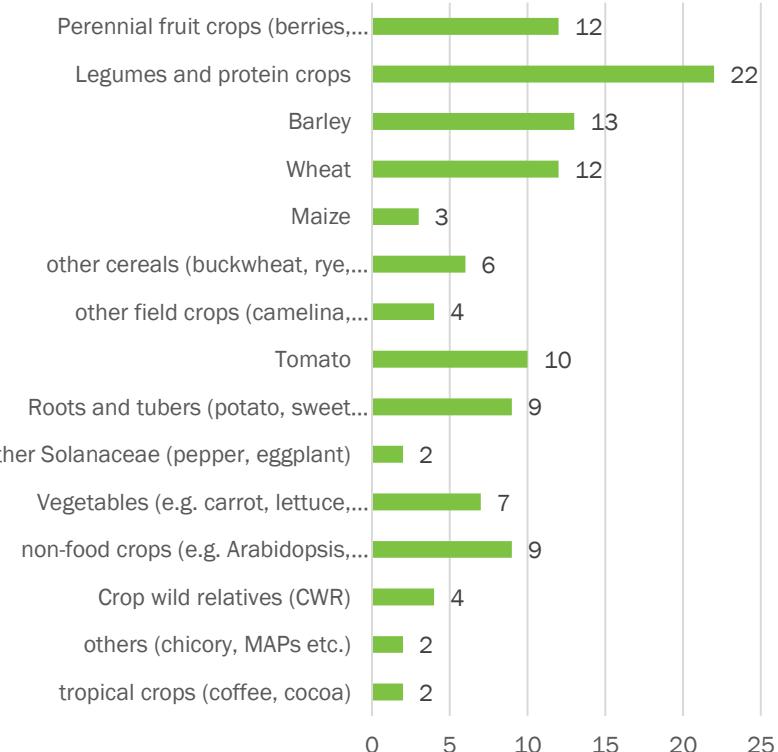


Constraints to PGR use in breeding

- 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

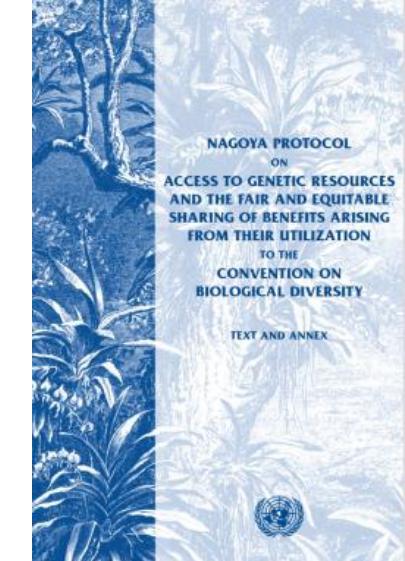
- Ensure quality conservation
- Institutional capacity
- Maintain sufficient stocks
- Updated taxonomy
- Documentation
- New (EU) regulations
- Phytosanitary issues

Users

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



Revision of EU Regulation on Plant Reproductive Materials

EU PRM legislation, partly dating to 1960s

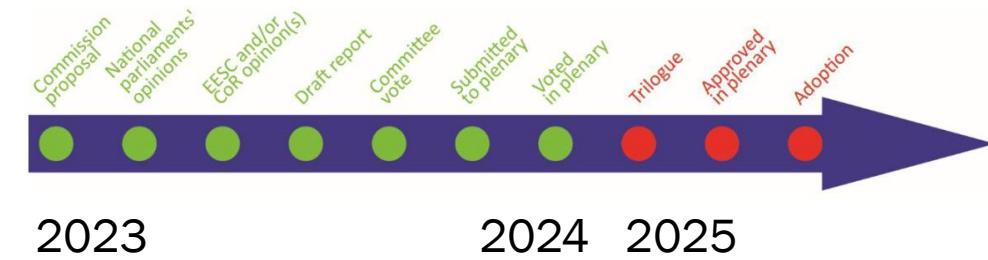
- Marketing of seeds, cuttings, tubers for plant production
- Registration of varieties
- Plant health and inspection/official controls

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 phytosanitary 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

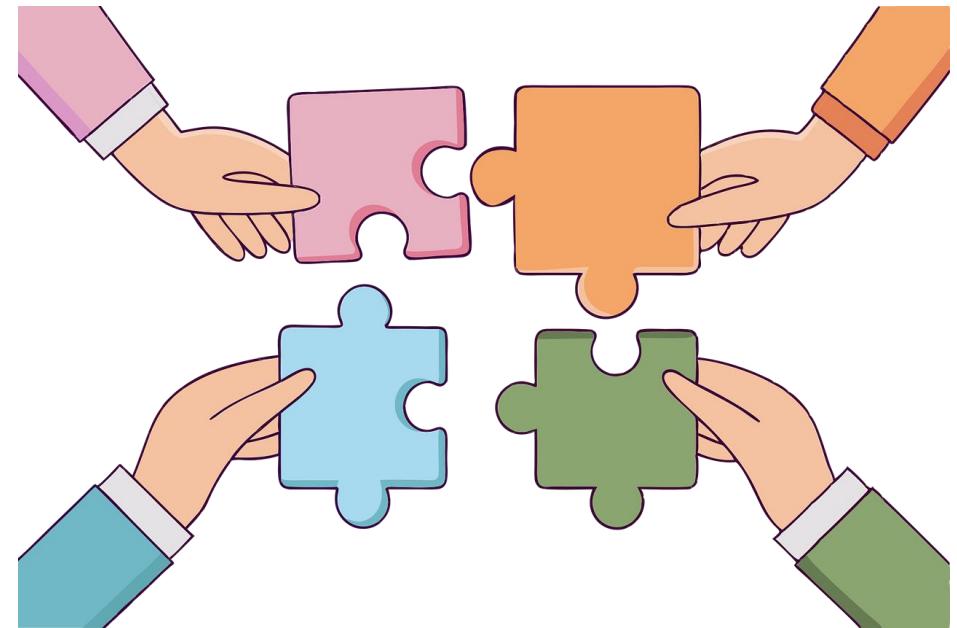


Image by [Franz Bachinger](#) from [Pixabay](#)

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

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THANK YOU

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s.goritschnig@cgiar.org

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