European Cooperative Programme for Plant Genetic Resources

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What is ECPGR

ECPGR is a collaborative Programme among most European countries, aiming at ensuring the long-term conservation and facilitating the utilization of plant genetic resources in Europe.

www.ecpgr.cgiar.org/

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Four core objectives of ECPGR

1. ***Ex situ* Conservation**: A European Genebank Integrated System (AEGIS)
2. **Documentation** of Plant Genetic Resources: EURISCO catalogue (passport and increasingly phenotypic data)
3. ***In situ* and on-farm conservation and management**: strategies for crop wild relatives (CWR) and landraces (LR)
4. **Use of PGRFA**: Strengthened relations between genebanks and users of germplasm

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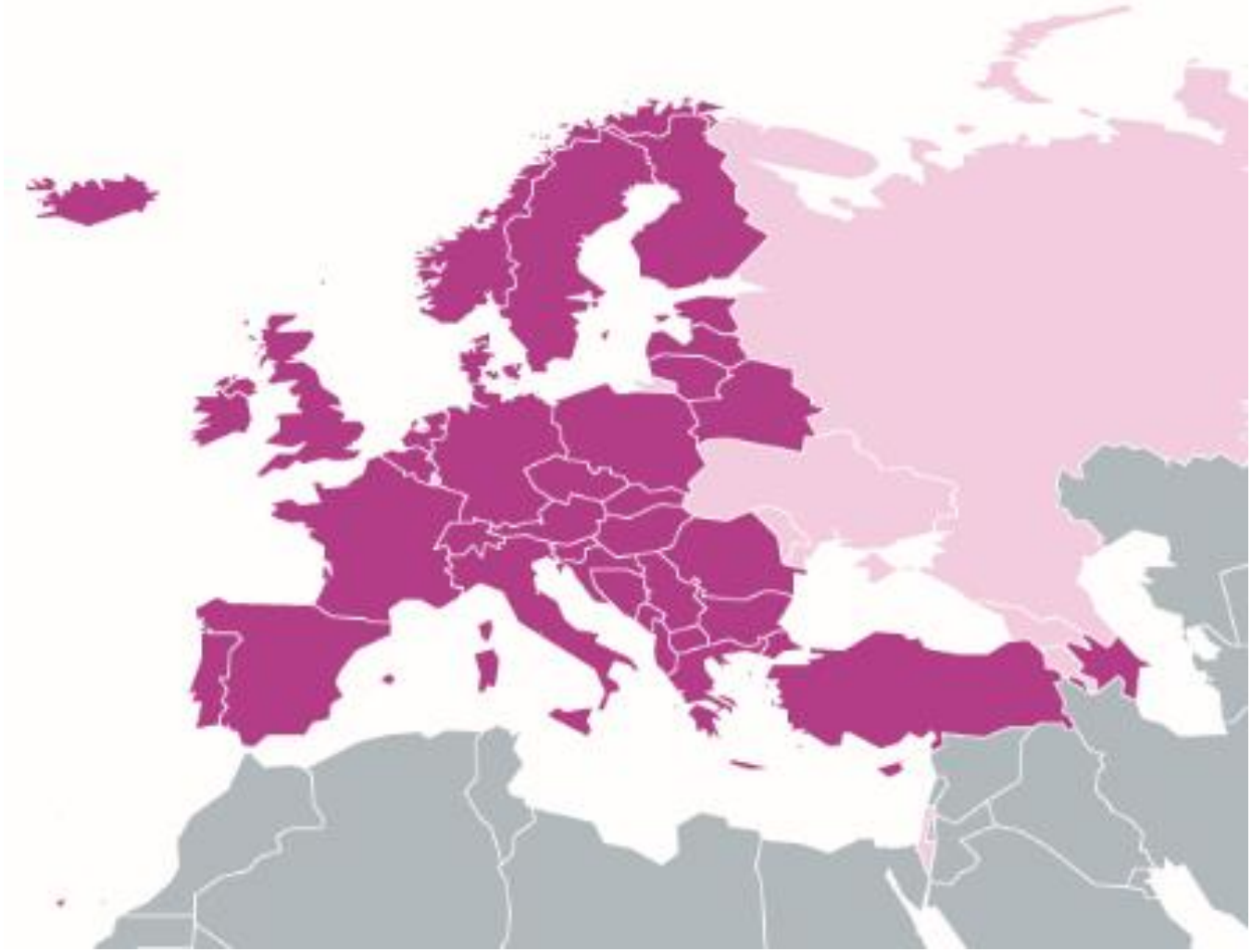
Annual budget of ca. € 520k from 38 countries



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Structure

Executive Committee

Steering Committee

Coordinating Secretariat

Crop Working Groups

- *Allium*
- *Avena*
- Barley
- *Beta*
- *Brassica*
- Cucurbits
- Fibre Crops (Flax and Hemp)
- Forages
- Grain Legumes
- Leafy Vegetables
- *Malus/Pyrus*
- Medicinal and Aromatic Plants
- Potato
- *Prunus*
- Solanaceae
- Umbellifer Crops
- *Vitis*
- Wheat

Thematic Working Groups

- Wild Species Conservation in Genetic Reserves
- On-farm Conservation and Management
- Documentation and Information

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ECPGR operates through Working Groups

Traditional activities:

- Exchange of information and planning of collaboration
- Agreement on standards, guidelines, descriptors
- Setting up databases and exchanging data
- Preparation of joint project proposals
- Training, capacity building

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Ex situ conservation: AEGIS

- To create A European Genebank Integrated System for PGRFA, aimed at conserving the genetically unique and important accessions for Europe and making them available for breeding and research. Such material will be safely conserved under conditions that ensure genetic integrity and viability in the long term

- So far ca. 30 000 accessions included in the European Collection

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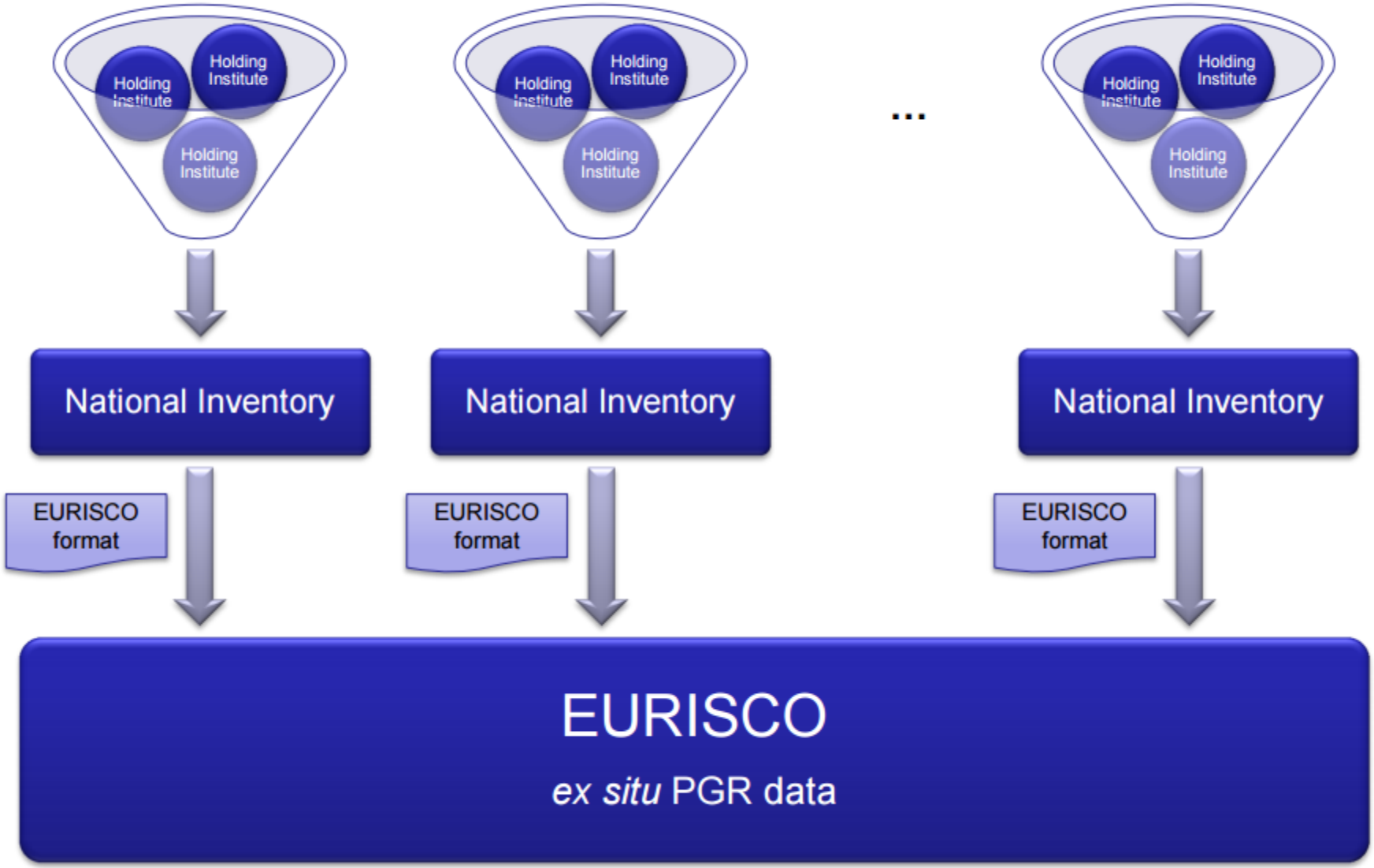
eurisco

Finding seeds for the future

http://eurisco.ecpgr.org

- A search catalogue providing information about *ex situ* plant collections maintained in Europe
- Maintained at IPK, Gatersleben, on behalf of ECPGR
- Based on a network of 43 *ex situ* National Inventories
- Current content: passport data on ca. 1.8 million samples from > 350 collections (6000 genera; 40 000 species names)
- Started to accept Characterization/ Evaluation data
- Average age of dataset: 1.2 years

Data flow


Holding Institute
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National Inventory
National Inventory
National Inventory
EURISCO format
EURISCO format
EURISCO format
EURISCO
ex situ PGR data

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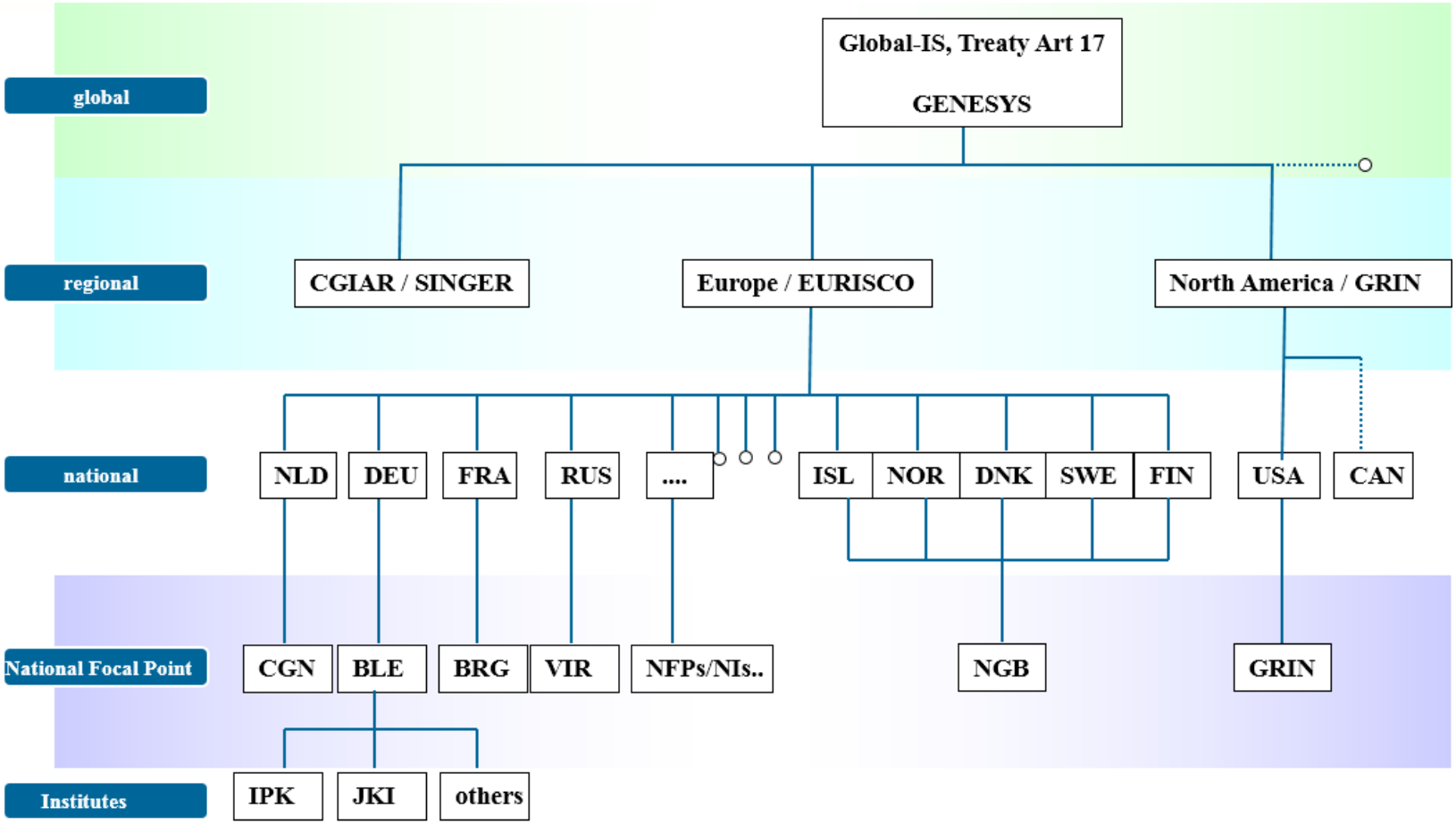
Global Information Infrastructure



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Possible role of ECPGR vis-à-vis Genotyping & Phenotyping

- **Germplasm** (Offer / Store)
- **Information** (Offer / Store / Link)
- **Policy** (Streamline conditions of access to material and fair sharing of benefits)
- **Networking** (Wide pool of expertise, environments, cooperation)

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Source and Sink of germplasm

Source: 1-2 M European accessions, including CWR, LR = vast untapped reservoir of variation to face CC scenarios

- Material is being / could be prepared for systematic geno/phenotyping: diversity panels; homozygous lines; mapping populations; hybrids with wild relatives

Sink: Genebanks are suitable repositories for reference (genotyped) material. Examples:

- 20 000 genotyped barley accessions at IPK
- Special collections at CGN: re-sequenced tomato and lettuce
- Genotyped lettuce diversity sets (Warwick GRU)

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Documentation & Information

EURISCO is open for storage of non-standardized phenotypic data (TRAIT / EXPERIMENT / SCORE)

No ambition to include x-omic information, but possibility to link to other databases through the relation established by Permanent Unique Identifiers (such as DOIs)

How to make x-omic data digestible to users: a possible future role for genebanks ?!

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Policy – brokering role

Access to material is increasingly regulated

→ ECPGR supports the principles of the International Treaty and the use of SMTA, covering the CBD and Nagoya obligations regarding compliance and benefit sharing

→ ECPGR can facilitate provision of access for large genotyping / phenotyping schemes and exercise a brokering role for the definition of the terms of access and use (Treaty principles)

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Networking

ECPGR can facilitate:

- Involvement of crop experts for the definition of agreed regional priorities
- Fostering Public-Private initiatives
- Multi–site evaluation across Europe
- Definition or promotion of standards/protocols
  - Genotyping/phenotyping protocols
  - Descriptors/ontologies
  - Data exchange formats

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Needs and gaps

Needs:

- Establish strategic alliances between genebanks / documentation centres / genotyping and phenotyping consortia / users

Gaps:

- 'Weakness' of many genebanks in effectively managing germplasm
- Recognition of the role of GR Networks by the EC/EU and definition of a specific EU Strategy for Agricultural Biodiversity

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Conclusion

- ECPGR is THE European network of PGR conservation actors
- ECPGR can provide access to PGR and associated knowledge
- ECPGR is interested to act as intermediary between its members and the -omics community

Thank you
for your attention!