

EXCHANGE AND USE OF GENRES WITHIN A PUBLIC/ PRIVATE PARTNERSHIP: THE EVA NETWORK'S EXPERIENCE

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Breeding Value Workshop on Genetic
Resources

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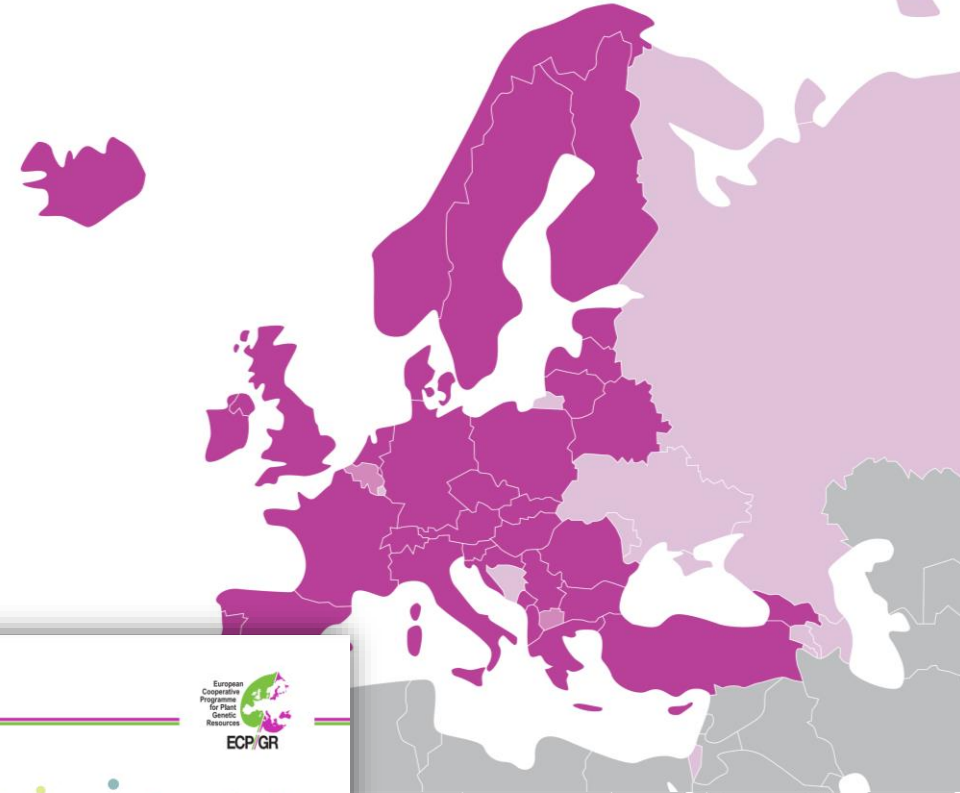
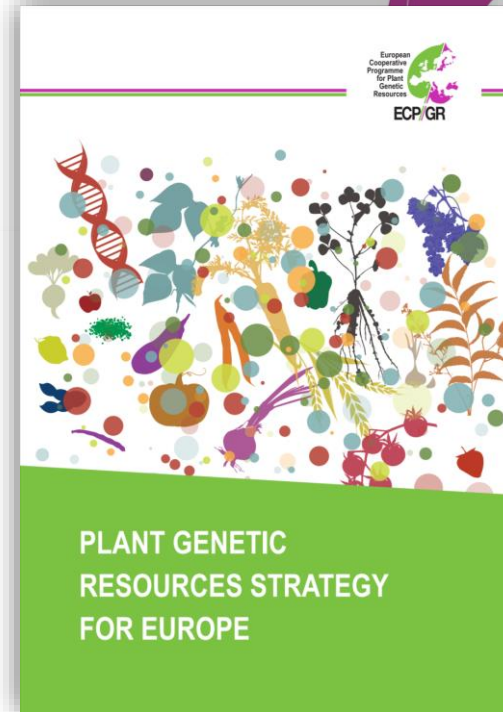
Topics

- What is ECPGR
- Exchange of PGRFA – History and Instruments
- Exchange of PGRFA within ECPGR
- European Evaluation networks – PGRFA exchange in public private partnerships

The European Cooperative Programme for Plant Genetic Resources

ECPGR is a collaborative Programme among most European countries since 1980, aiming at ensuring the **long-term conservation** and facilitating the **sustainable utilization** of plant genetic resources in Europe

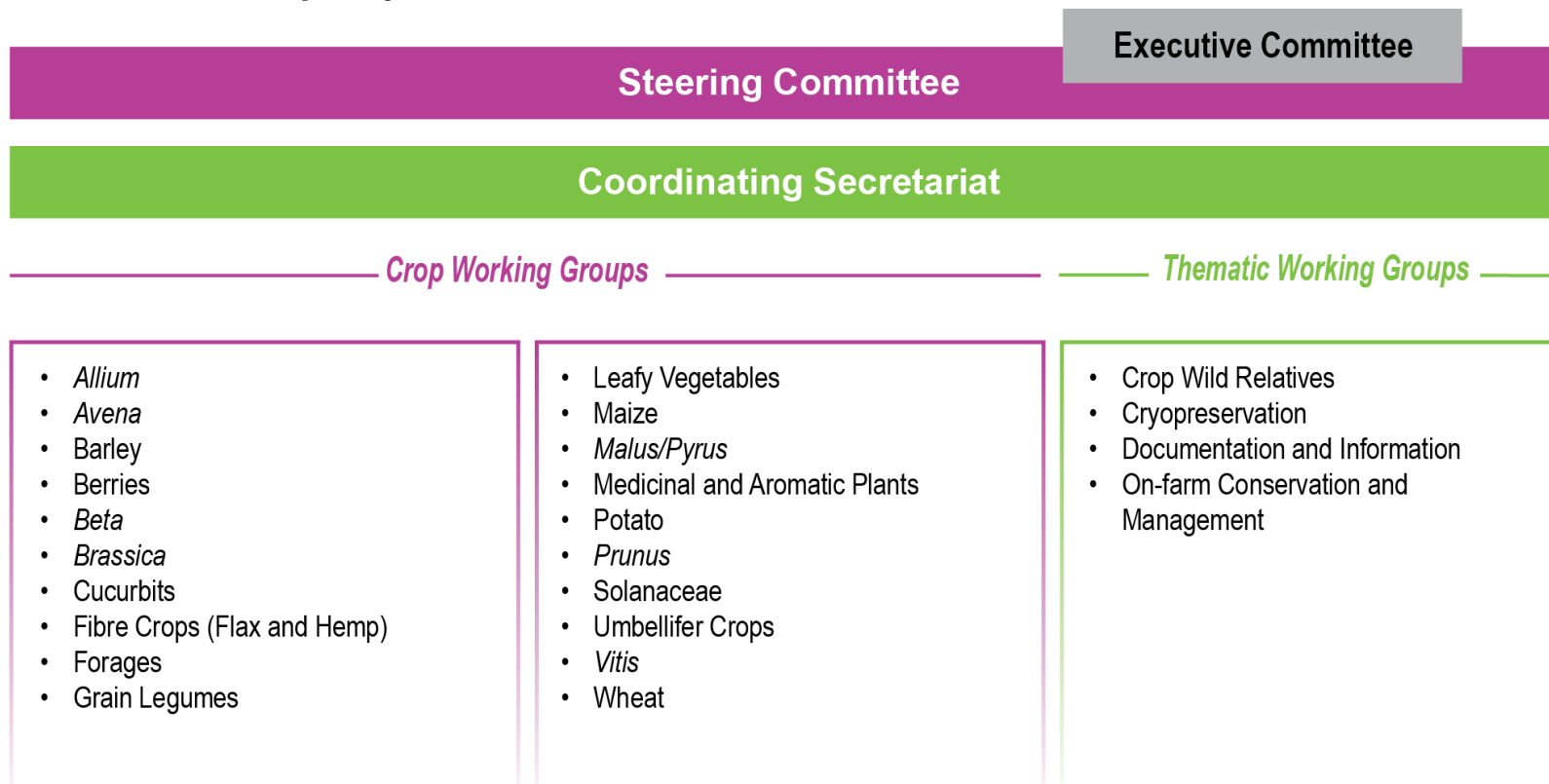
The **ECPGR PGR strategy for Europe** outlines goals and necessary actions and step changes needed for the next decade.



... X (Letter of agreement signed)
... X (Country did not sign Letter of Agreement, but is paying contributions)
... X

ECPGR structure

- Funded by member countries
- Governed by a Steering Committee of National Coordinators
- Implementation through Working groups (meetings and activities), documentation and projects



ECPGR main products



European Search Catalogue for Plant Genetic Resources



A European Genebank Integrated System



European Evaluation Network

European Evaluation Network for PGRFA



Genetic
Resources

Open Access journal - www.genresj.org



ECPGR

Objectives of ECPGR

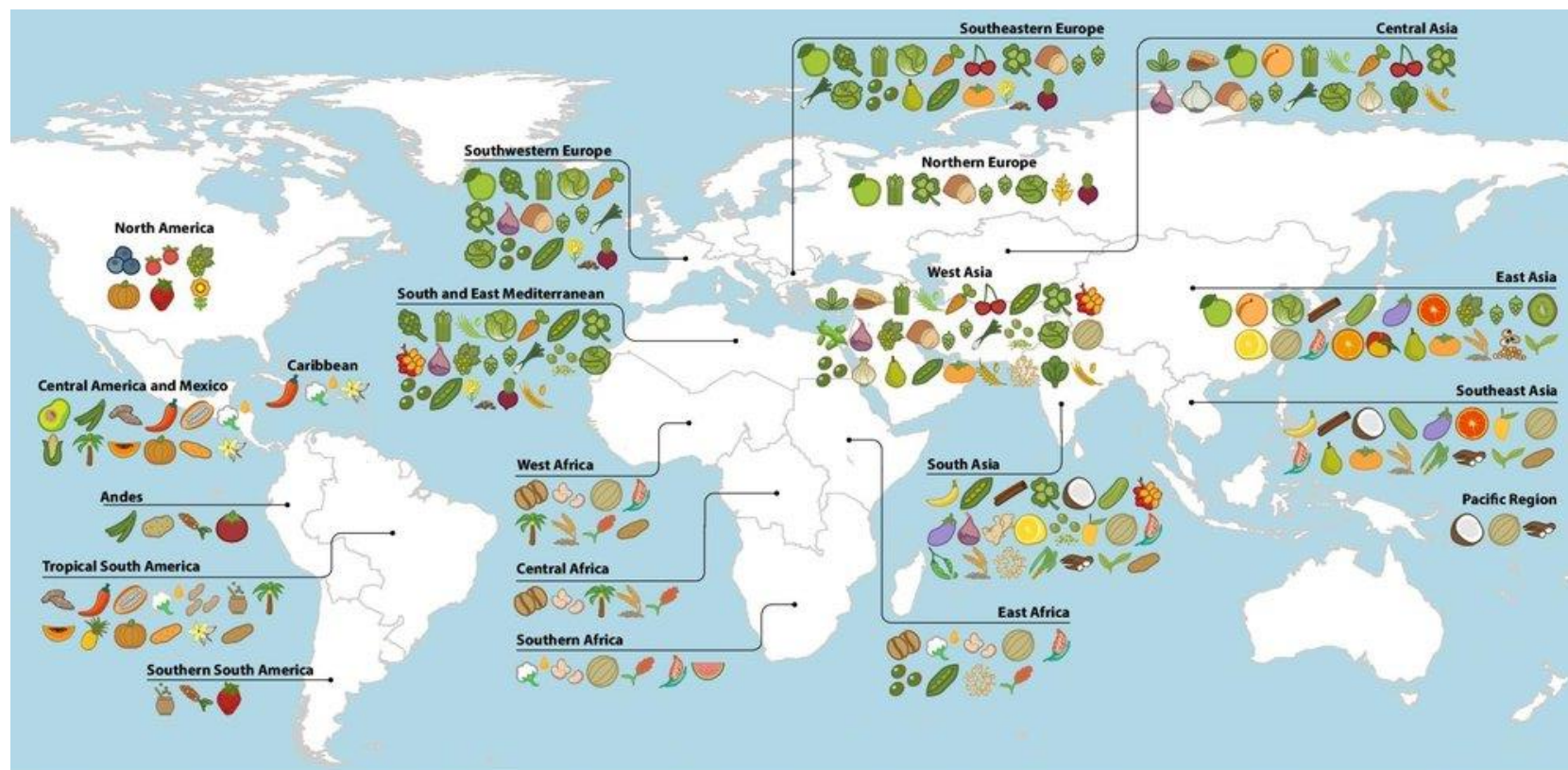
1. Ex situ conservation and provision of access through AEGIS and the European Collection
2. Documentation of passport and phenotypic information through EURISCO (ex situ and in situ)
3. In situ conservation and use of crop wild relatives
4. Promotion of on-farm conservation and management
5. Promote use of PGRFA (EVA)
























































History and Instruments of global exchange of PGRFA



Primary regions of crop diversity



- | | | | | | | | | |
|---|--|--|--|--|--|---|--|--|
|  Alfalfa |  Beans |  Clover |  Eggplants |  Hops |  Melons |  Pears |  Rice |  Sunflower |
|  Almonds |  Blueberries |  Cocoa beans |  Faba beans |  Kiwi |  Millets |  Peas |  Rye |  Sweet potatoes |
|  Apples |  Cabbages |  Coconuts |  Figs |  Leeks |  Oats |  Pigeonpeas |  Sesame |  Taro |
|  Apricots |  Carrots |  Coffee |  Garlic |  Lemons & limes |  Olives |  Pineapples |  Sorghum |  Tea |
|  Artichokes |  Cassava |  Cottonseed oil |  Ginger |  Lentils |  Onions |  Plums |  Soybean |  Tomatoes |
|  Asparagus |  Cherries |  Cowpeas |  Grapefruit |  Lettuce |  Oranges |  Potatoes |  Spinach | Vanilla |
| Avocados | Chickpeas | Cranberries | Grapes | Maize | Palm oil | Pumpkins | Strawberries | Watermelons |
| Bananas & plantains | Chillies & peppers | Cucumbers | Groundnut | Mangoes | Papayas | Quinoa | Sugar beet | Wheat |
| Barley | Cinnamon | Dates | Hazelnuts | Mate | Peaches & nectarines | Rape & mustard seed | Sugarcane | Yams |

Khoury et al, Plant Treaty research study #8

Global access to PGRFA

- Colonial history of PGRFA exploitation – sovereign rights over a country's GR
- No country is entirely self-sufficient in terms of PGRFA
- PGRFA are essential for global food security, providing traits and diversity for breeding
- Millenia of breeding processes by farmers and breeders have created new synthetic diversity, varieties' origin sometimes opaque

→ How to ensure access to PGRFA while guaranteeing benefits to the providing country – Access and Benefit Sharing



Where access and benefit-sharing comes from: A historical overview

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^b Abyss Consulting, Sweden

Abstract: The international legal system of access and benefit-sharing of genetic resources (or ABS) under the Convention on Biological Diversity (CBD) is an ever-evolving field as its material, temporal and activity scope is still under discussion to meet the needs of the advancement of research and development activities as well as the questions of fairness and equity that evolve with them. Activities, such as research and development with digital sequence information (DSI), currently take considerable space in the negotiations and the lack of consensus between the Global North and the Global South continues. This paper gets its raison d'être from this lack of consensus and aims to provide a better understanding of the debate around the fair and equitable sharing of benefits arising from genetic resources as well as the sovereignty of states over their natural resources. As such, the paper provides an analysis of all relevant documents at the international level, starting from the UN Charter to the final text of the CBD with the hope of reminding the ongoing negotiations over the CBD why we have ABS in the first place and what the international community historically aimed for when regulating genetic resources at the international level. Looking back at why we had the first legally binding ABS instrument in the first place, and why we thought this instrument would achieve fairness and equity in dealing with genetic resources, will serve the interests of all Parties to the CBD and will hopefully enable them to interpret the provisions based on their overarching aim and reasoning.

Keywords: CBD, ABS, access and benefitsharing, Convention on Biological Diversity, benefitsharing, global multilateral benefitsharing mechanism, Nagoya Protocol, Plant Treaty negotiations, ITPGRFA, genetic resources, plant genetic resources

Citation: Sirakaya, A. (2022). Where access and benefit-sharing comes from: A historical overview. *Genetic Resources* 3 (6), 74–88. doi: [10.46265/genresj.PPUF5169](https://doi.org/10.46265/genresj.PPUF5169).

History of global PGR exchange

- **1950s** within UN first agreements on sovereign rights of countries' own (genetic) resources
- **1968** International Biosphere conference – first high-level discussions on finiteness of global resources and need for conservation of biodiversity
- **1972** Stockholm conference – interdependence of economic development and environmental resilience and of developed and developing world → UNEP
- **1970s** CGIAR centres established to implement FAO mandate to strengthen in situ and ex situ conservation, drivers of Green Revolution and large genebank collections



International instruments on ABS

- International Undertaking on PGRFA – 1983
- Convention on Biodiversity (CBD) – 1993
- International Treaty on PGRFA – 2004

International Undertaking on PGRFA 1983

“plant genetic resources are a common heritage of mankind to be preserved and to be freely available for use, for the benefit of present and future generations” (FAO Resolution 4/89, 1989)

Voluntary agreement based on the principle that PGR were a “heritage of mankind and consequently should be available without restriction”

Concerns over:

- Sovereign rights of the countries
- Free availability and compatibility with plant breeders' rights
- Inequality of the system – failed to recognize contribution over time of farmers (Plant Variety Protection – Farmer's rights)
- First attempts at establishing rules for ABS



Convention on Biodiversity (CBD) 1993 (and its ABS implementing instrument Nagoya Protocol 2014)

- Applies to all biodiversity (animals, plants, microbes)
- Sovereignty of States over their natural resources is recognized
- Contracting Parties should create conditions to facilitate access to GR
- Access is on mutually agreed terms and subject to Prior Informed Consent (bilateral agreements)
- Predictable conditions for access to GR and traditional knowledge
- Tools for access, benefit sharing and compliance

Outstanding issues of PGRFA

- CBD covers only genetic resources provided by Contracting Parties that are **countries of origin** or that acquired the genetic resources in accordance with the Convention
- CBD does not cover access to ex situ material collected before the entry into force of the Convention, including CGIAR collections



International Treaty on PGRFA (2004)

Objectives:

- The conservation and sustainable use of plant genetic resources for food and agriculture
- The fair and equitable sharing of benefits derived from their use, in harmony with the CBD, for sustainable agriculture and food security

The Multilateral System of Access and Benefit Sharing

- 64 Crop species in Annex 1 → under control of contracting parties and in public domain

The Standard Material Transfer Agreement (SMTA)

- Provisions that govern the exchange of material under the Multilateral System
- Used for every transfer of material
- Significantly lower transaction costs compared with bilateral approach
- Ensures benefit sharing multilaterally among Contracting Parties



PGRFA exchange within ECPGR



PGRFA diversity in



2.085.448 accessions
 43 national inventories
 407 holding institutes
 6.731 different genera
 45.192 species
429.355 MLS accessions

70.426 AEGIS accessions



<http://eurisco.ecpgr.org>

AEGIS – A European Genebank Integrated System



- Platform connecting European genebanks under a common system for the long-term conservation and use of unique PGRFA
- Country membership via **Memorandum of Understanding**
- Decentralized **European Collection** of unique germplasm
- **Availability through SMTA**, including non-Annex I material
- **Quality System**: agreed standards, peer review and capacity building

<http://ecpgr.cgiar.org/aegis>

70.426
> 390

AEGIS accessions
Genera

since 2009



ECP/GR

European Evaluation Network for PGRFA (EVA)

EVA

European Evaluation Network

- Increase **knowledge** on germplasm held in European genebanks
- Improve passport information in **EURISCO** and add C&E data
- Promote the **use of genebank germplasm** in breeding and cultivation
- Widen the stakeholders involved in using PGRFA and foster cooperation between public and private sectors through creation of **public-private partnerships**

<https://www.ecpgr.cgiar.org/european-evaluation-network-eva>

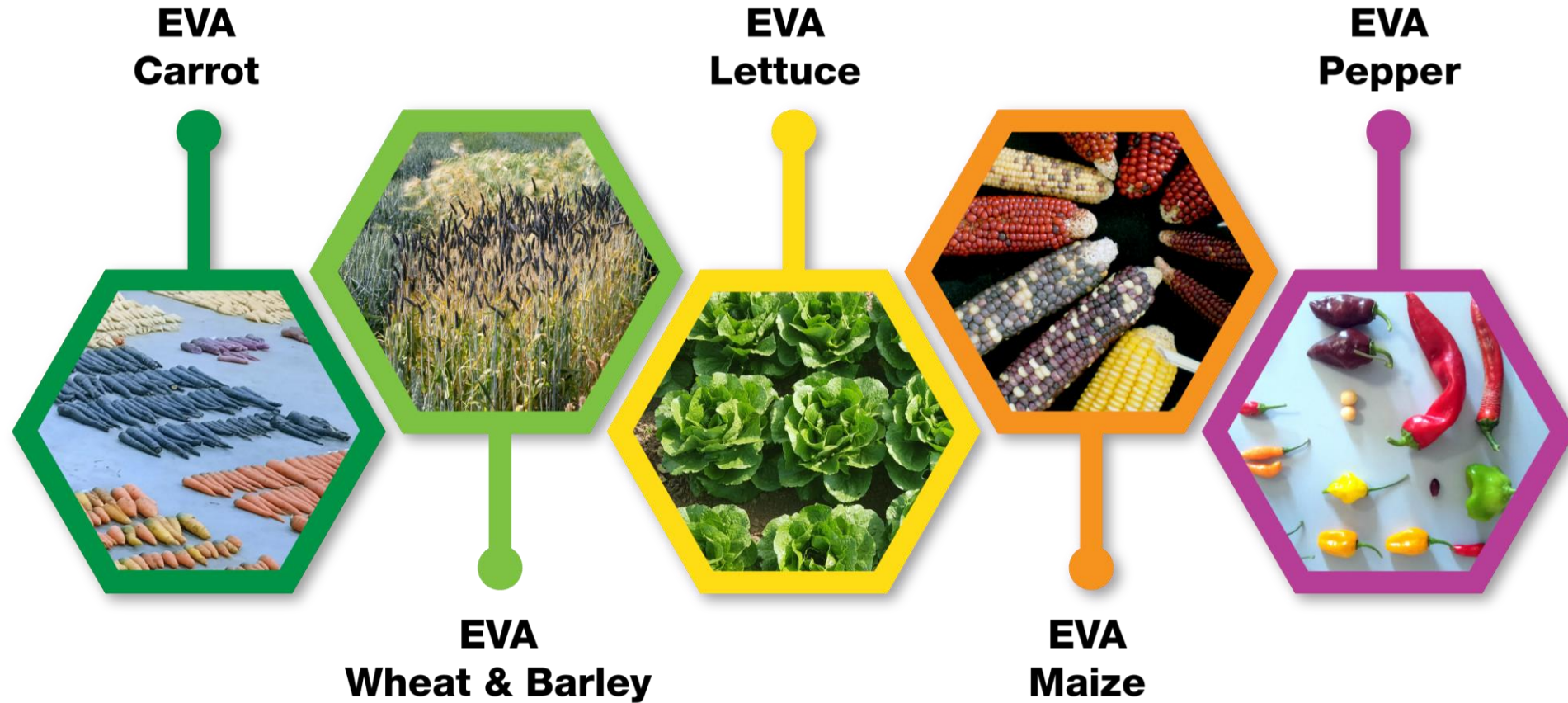


Federal Ministry
of Food
and Agriculture

PUBLIC-PRIVATE PARTNERSHIPS

Increasing ECPGR knowledge and opportunities on public-private partnerships for the use of plant genetic resources for food and agriculture.

Five crop-specific EVA networks



EVA Legumes is in preparation through Grain Legumes WG activity **ForEVA**

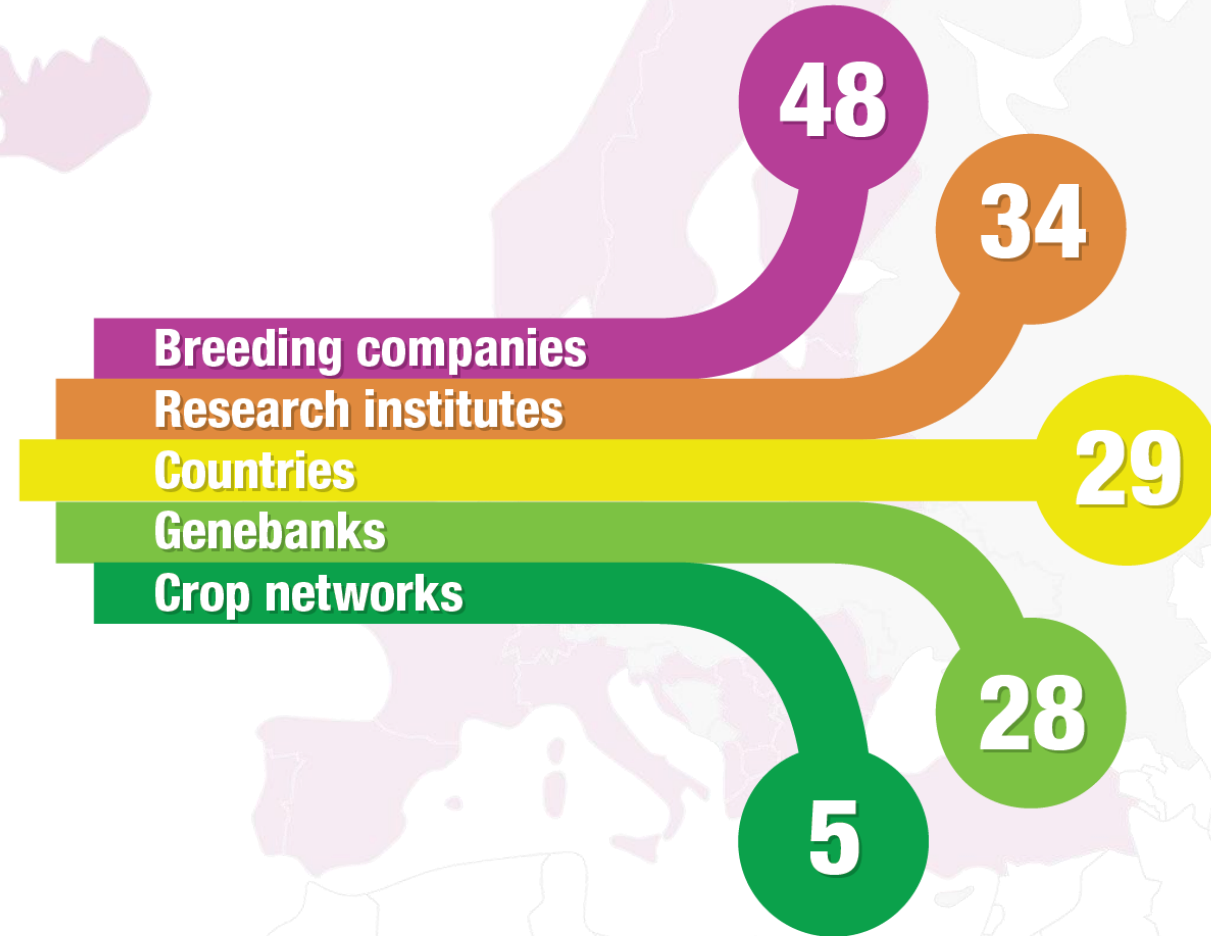
More than 90 EVA partners

- **Public partners**

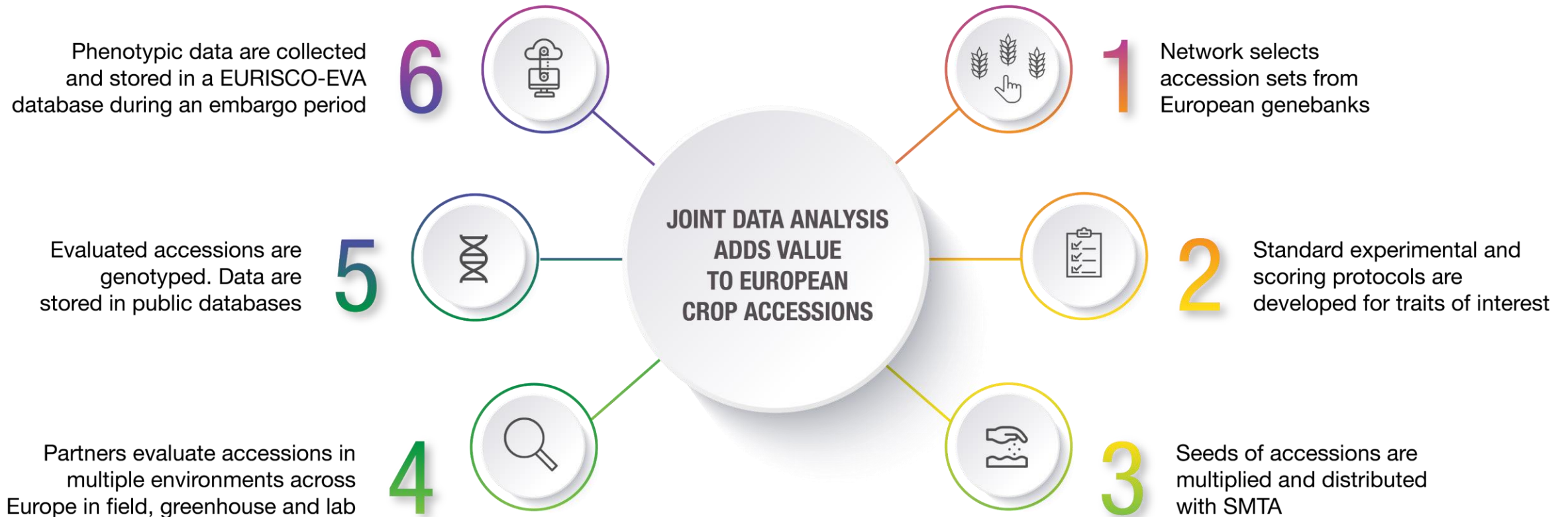
- Genebanks
- Universities and research institutes

- **Private partners**

- Multinational breeding companies
- SME breeding companies
- Organic breeding companies
- Breeding and farming cooperatives



HOW THE EVA CROP NETWORKS OPERATE



Cooperation agreement ensures privileged access to data, while material is exchanged through SMTA and can be used for further development and eventual commercial use

109 Evaluation trial sites across Europe



EVA wheat trial 2021, BASF (V. Spamer)



EVA lettuce trial 2022 Sativa Rheinau (C. Aichholz)



EVA pepper trial 2021, Semillas Fito (M. Fernandez)



EVA carrot trial 2021 Institut Agro Angers (E. Geoffriau)

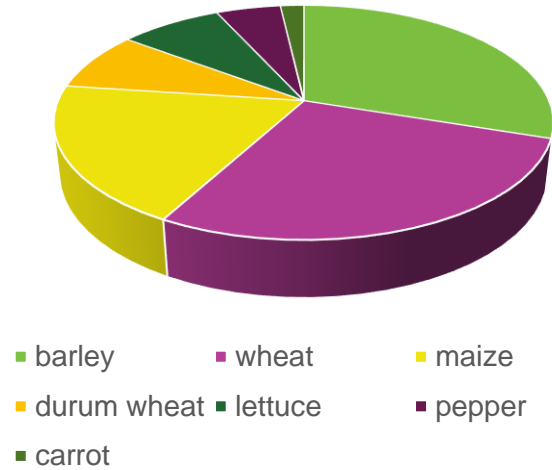


EVA maize trial 2021, CREA-CI (C. Balconi)

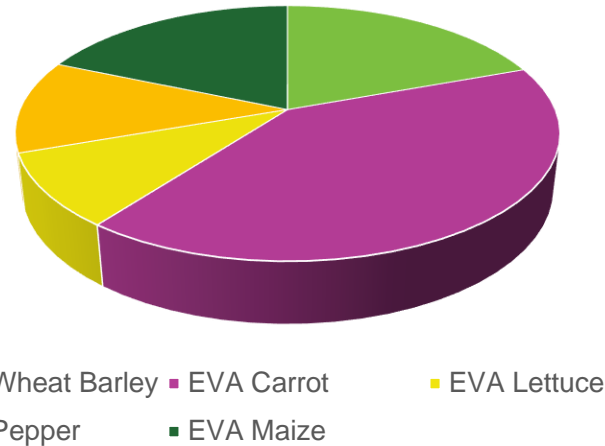


Output of EVA networks

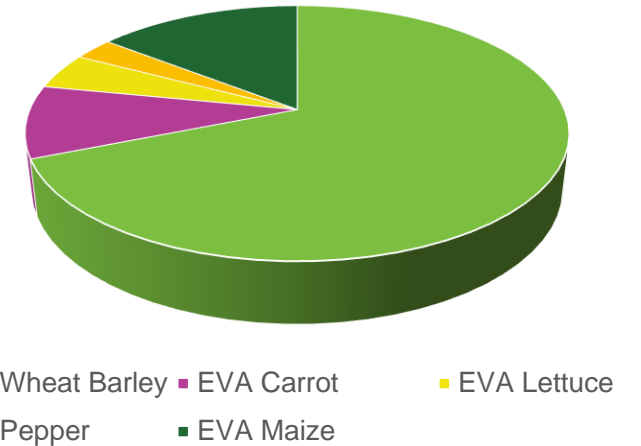
> 3,600 EVA accessions



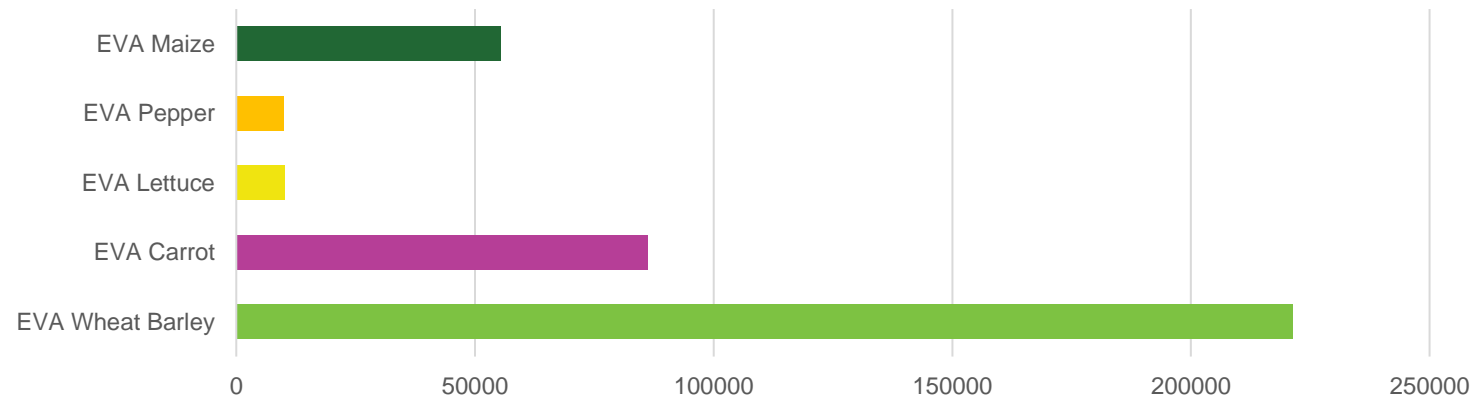
> 230 Traits evaluated

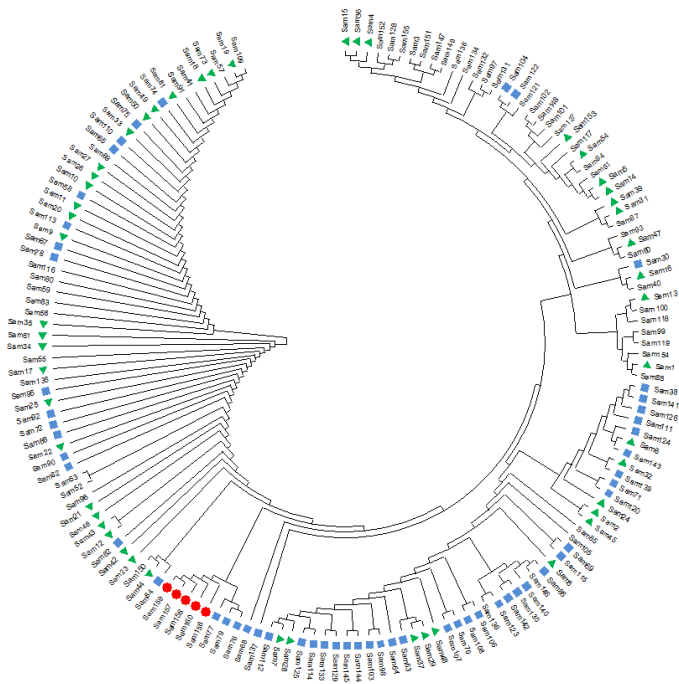


283 EVA trials



> 380.000 evaluation data points

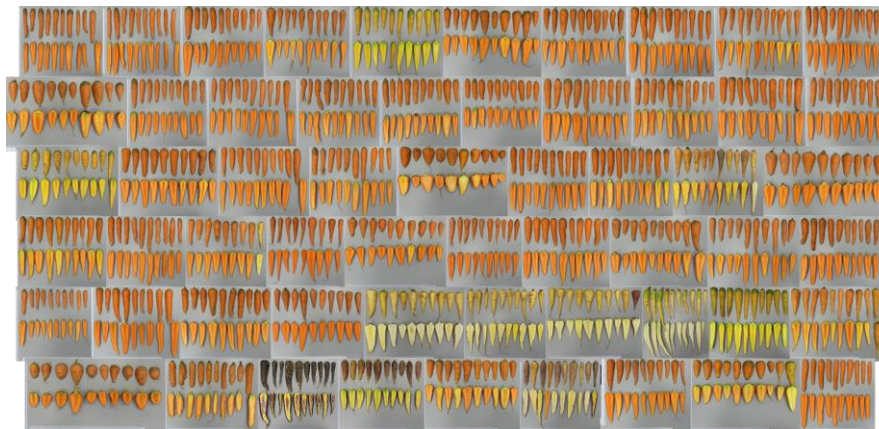




P. Tripodi, CREA, Italy

- Genetic diversity of 160 Lactuca accessions evaluated in **EVA Lettuce**

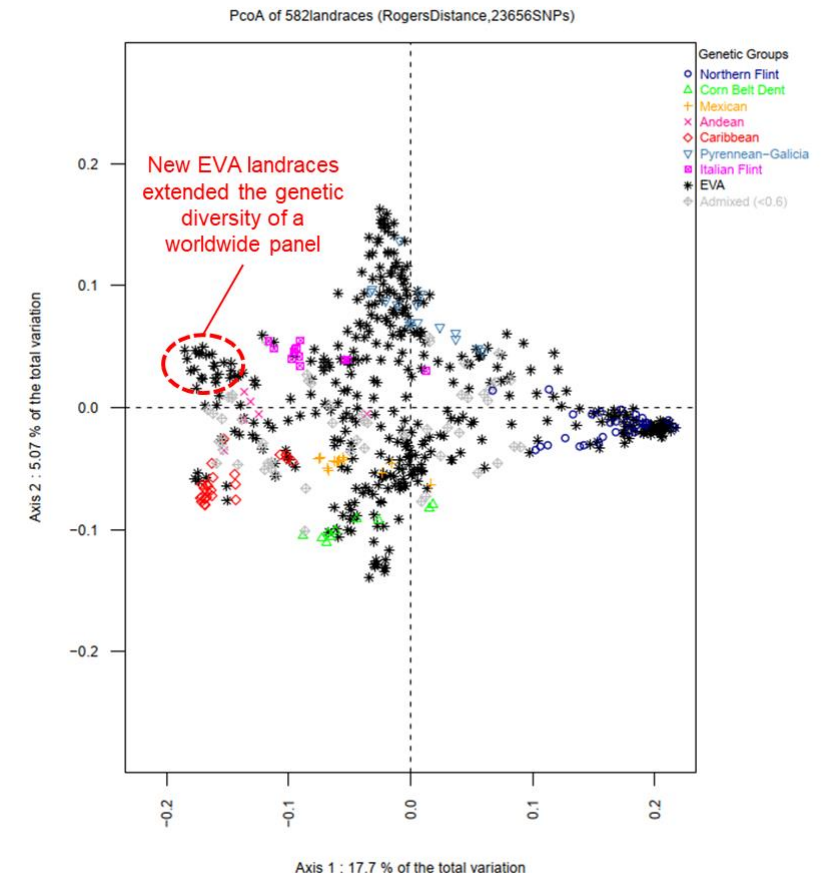
EVA generating knowledge on European PGRFA



- Phenotypic diversity of 60 accessions evaluated in **EVA Carrot**

Photos: E. Geoffriau, Institut Agro Rennes-Angers, France

- Genetic diversity of 416 **EVA maize** landraces



D. Madur, INRAE, France

Conclusions

- AEGIS extends scope of MLS to materials outside Annex 1, making > 70,000 accessions of all crops in the European Collection available with SMTA
- ECPGR recommends use of SMTA for all exchange of PGRFA, even if not Annex 1
- Use of SMTA with the terms and conditions of the MLS of ITPGRFA has proven to be the best available option to involve private breeders into partnerships with genebanks and the public sector in EVA

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AGENT



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ECP/GR

A close-up photograph of several blueberries hanging from thin, brown, woody branches. The blueberries are a deep blue color with a slightly fuzzy texture. The background is blurred, showing more branches and foliage in shades of brown and green.

THANK YOU
