

ECPGR Phase X

Lorenzo Maggioni (ECPGR Secretariat)

First Meeting of Maize WG, 2-3 December 2019, Belgrade, Serbia

ECPGR long-term goal

Stakeholders in Europe collaboratively,
rationally and effectively **conserve ex situ and
in situ PGRFA**, provide **access** and increase
sustainable **use**

www.ecpgr.cgiar.org

Objectives of ECPGR Phase X (2019–2023)

1. To efficiently conserve and provide access to unique germplasm in Europe through **AEGIS** and the **European Collection**
2. To provide passport and phenotypic information of actively conserved European PGRFA diversity *ex situ* and *in situ* through the **EURISCO** catalogue
3. To improve *in situ* conservation and use of **crop wild relatives**
4. To promote **on-farm** conservation and management of European PGRFA diversity
5. To promote **use** of PGRFA

Membership and funding

Ten Phases (1980-2023)

- Member countries contribute funding (ca. € 540 000 per year)
- National Coordinators are nominated at governmental level
- Use of funds:
 - Coordination
 - Working Group activities
 - Maintenance of EURISCO



Structure



Maize Working Group



Chair: Violeta Andjelkovic

✉ [violeta\(at\)mrizp.rs](mailto:violeta(at)mrizp.rs)

Nominated as Chair for Phase X in February 2019

[View CV](#)

Working Group activities and related events

September 2019

The first meeting of the Working Group will take place 2-3 December 2019 in Belgrade, Serbia. [more info](#)

February 2019

Violeta Andjelkovic, Head of Genebank, Maize Research Institute in Zemun Polje, Serbia, was nominated as Chair of the Working Group.

January 2019

Several countries have already nominated WG members (list available [here](#)). The WG will be able to start operating as soon as the Chair will have been nominated (selection process is ongoing).

26 ECPGR Maize Working Group Members

[✉ Email Distribution List](#)

Chair: Violeta Andjelkovic ✉ [violeta\(at\)mrizp.rs](mailto:violeta(at)mrizp.rs)

[Full list](#)

Genebank Curator (8)

Crop specialist (6)

Information/Documentation (2)

Plant breeder (4)

Policy and law (2)

Other expertise (0)

Contact Persons (8)

Past ECPGR Activities on Maize



The ECPGR Maize Database

Maize Research Institute "Zemun Polje"
MRI Genebank, Slobodana Bajica 1, 11185 Belgrade, Serbia
Tel: (+381-11) 3756704 Fax: (+381-11) 3756707

Database manager: [Dr. Violeta Anđelković](#)



The Maize database was established at the Maize Research Institute "Zemun Polje", Serbia, on the initiative of the European Cooperative Programme for Plant Genetic Resources (ECPGR) in 1996. It is maintained by the Maize Genebank at the Maize Research Institute "Zemun Polje" (MRIZP). The database contains passport data of **11865** accessions representing the Maize collections from 15 European contributors (13 countries). The structure of the database follows the principles of the IPGRI/FAO Multi-Crop descriptor list

Database access	Further information
On-line - search	Contributors of EMDb project
	Database description - emdb_cb.pdf (41 KB)
Off-line - hardcopy - send mail to the Database Administrator	

EUROPEAN COOPERATIVE PROGRAMME FOR CROP GENETIC RESOURCES NETWORKS (ECP/GR)

Maize genetic resources in Europe

Report of a workshop
28-29 May 1996
Rome, Italy

E. Lipman, R.H. Ellis and T. Gass, compilers





AEGIS objective

Conserving in a **collaborative way** and at **agreed quality standards**, the **genetically unique** and important accessions for Europe of **all crops** and making them **available** for breeding and research **through SMTAs**

1. Ex situ conservation

A European Genebank Integrated System AEGIS



- Establishment of **decentralized European Collection** of unique and important accessions
- **Memorandum of Understanding** whereby countries commit to **long-term conservation** and management of European Accessions and to their availability
- **Availability through SMTA**, including non-Annex I material
- **Quality System**: agreed standards, reporting, monitoring & capacity building
- **Role of Working Groups** for the management of decentralized collection

AEGIS benefits

Users

- Transparent/well defined set of accessions available from all of Europe under clear and uniform terms of access (SMTA)
- Compliance with CBD/Nagoya Protocol
- Unique material
- Well conserved
- Well documented

AEGIS benefits

Genebank curators

- Clear and participatory framework establishing and revising standards for conservation
- Capacity building support triggered by peer/mentorship review system
- Stable commitment from country/region to conserve European Collection for the long-term

AEGIS benefits

Policy makers

- Compliance with International Treaty / Nagoya Protocol
- Mechanism to prioritize resources
- Strengthened position of European region (example of efficiency/ commitment)

AEGIS membership



35 Member countries

68 Associate Member Agreements

The European Collection

Total number of European Accessions: **57 294** (November 2019)

Country	No of accessions
Albania	8
Bulgaria	341
Bosnia and Herzegovina	22
Croatia	90
Czechia	1341
Estonia	129
Germany	26757
Italy	8605
Latvia	27
Lithuania	36
Montenegro	31
Netherlands	5845
Nordic Countries	4779
Poland	443
Romania	623
Slovakia	640
Switzerland	5611
United Kingdom	1659
Total	57 294

Maize accessions in AEGIS

. List of European Accessions

- Genesys overview of AEGIS accessions

Zea (5698)

Zea mays

5698 Italy (5416), Netherlands (195),
Romania (87)

Genesys overview of AEGIS accessions

HISTORIC RECORDS ▲		476 accessions	AEGIS ✕	Crop: maize ✕	Historic ✕
<input checked="" type="checkbox"/> Yes	476	Holding Institute			
<input type="checkbox"/> No	5,135	ITA386 476			

Genesys overview of maize accessions in AEGIS

Type of Germplasm storage

Seed collection	4,940
Medium term seed collection	195
Long term seed collection	195

Genesys overview of AEGIS accessions

Biological status of accession

Inbred line	3,228
Traditional cultivar/Landrace	1,442
Breeding/Research Material	444
Genetic stock	6
Advanced/improved cultivar	5
Not specified	10

Crop-specific conservation standards

CROP-SPECIFIC GENE BANK STANDARDS FOR ORTHODOX SEEDS

Agreed by the Wheat Working Group

January 2016

FAO Genebank standards for orthodox seeds	Crop-specific genebank standards for orthodox seeds – Wheat gene pools (<i>Triticum</i> , <i>Aegilops</i> , <i>Secale</i> , <i>XTriticosecale</i>) <i>No comment in this column means agreement with FAO standard</i>	Remarks (reasons for deviating from FAO standards)
4.2 Standards for drying and storage		
4.2.1 All seed samples should be dried to equilibrium in a controlled environment of 5-20°C and 10-25 percent of relative humidity, depending upon species.		
4.2.2 After drying, all seed samples need to be sealed in a suitable airtight container for long term storage; in some instances where collections that need frequent access to seeds or likely to be depleted well before the predicted time for loss in viability, it is then possible to store seeds in non-airtight containers.		
4.2.3 Most-original-samples and safety duplicate samples should be stored under long-term conditions (base collections) at a temperature of -18 ± 3°C and relative humidity of 15 ± 3 percent.	Most-original-samples and safety duplicate samples should be stored under long-term conditions (base collections) at a temperature of -18 ± 3°C and relative humidity of 15 ± 3 percent. However, when samples are stored in airtight containers, relative humidity in the storage room is of no relevance.	
4.2.4 For medium-term conditions (active collection) samples should be stored under refrigeration at 5-10°C and relative humidity of 15 ± 3 percent.	For medium-term conditions (active collection) samples should be stored under refrigeration at 5-10°C and relative humidity of 15 ± 3 percent, whenever possible.	Medium-term conservation at 15 ± 3 percent RH can be very expensive and technically difficult to attain in case of large cold rooms.
4.3 Standards for seed viability monitoring		
4.3.1 The initial seed viability test should be conducted after cleaning and drying the accession or at the latest within 12 months after receipt of the sample at the genebank.	The initial seed viability test should be conducted after cleaning and drying the accession or at the latest within 12 months after receipt of the sample at the genebank. This period can be exceeded in case it is necessary to break seed dormancy.	CWR usually have dormancy. It can exceed 12 months.

2. Documentation

→ See Stephan Weise PPT

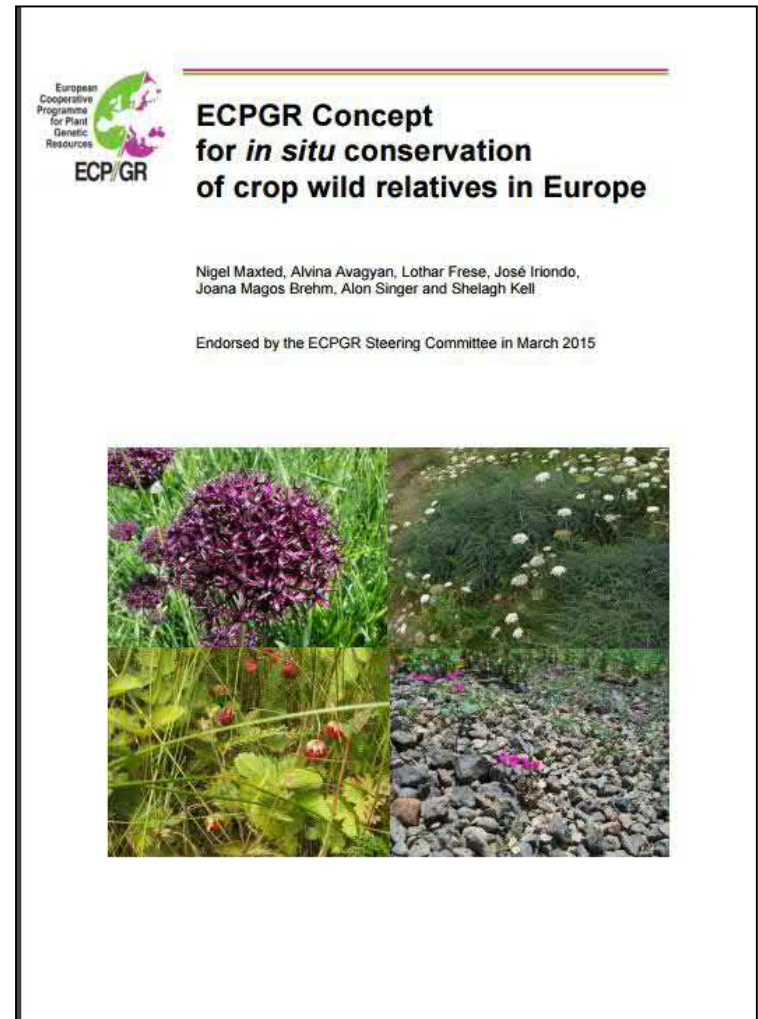


<http://eurisco.ecpgr.org>



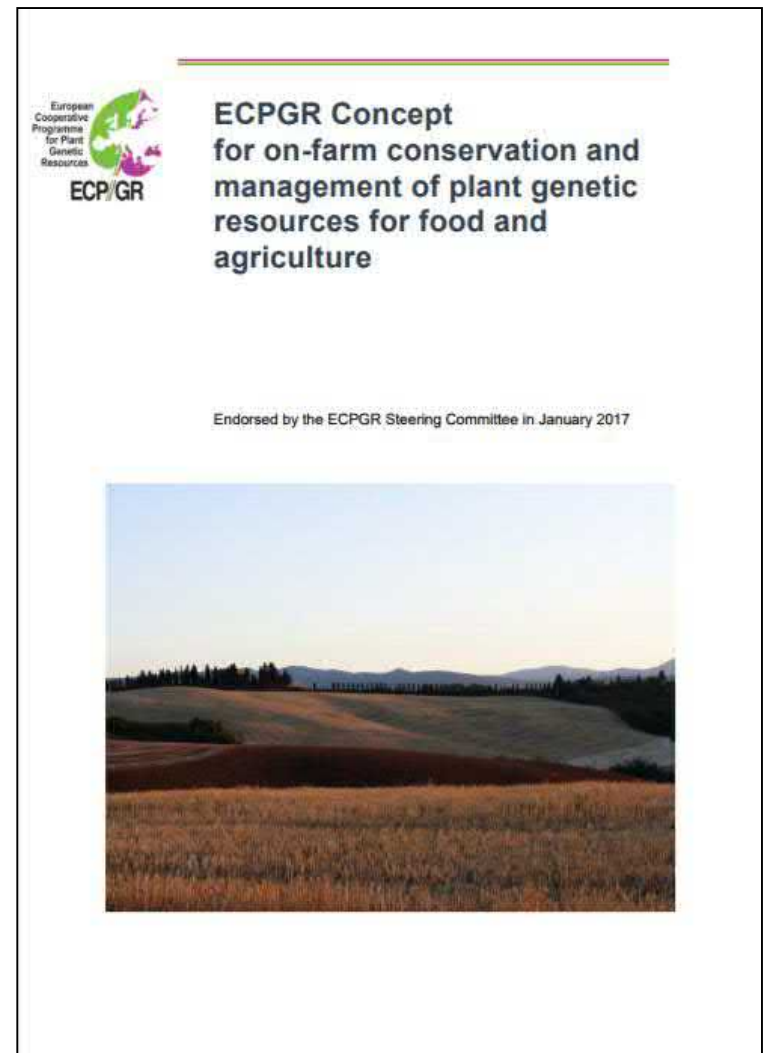
3. Conservation of crop wild relatives

- National and regional conservation strategy planning (checklists -> priorities -> inventories -> action plans)
- Designation and management of **Most Appropriate Wild Populations** (genetic diversity and traits of interest) **in genetic reserves**



4. On farm conservation and management

- European Inventory of on-farm genetic diversity
- Developing indicators for monitoring diversity and threat
- Promoting good practices for on-farm management
- Concept of European agro-diversity sites
- Addressing issues of ownership, access, availability, marketing, etc.



5. Relations with users

Establishment of the European PGRFA Evaluation Network (EVA)

WHEREAS the world is facing increasing challenges to food security through the loss of diversity and the underutilization of the diversity that exists;

WHEREAS the natural range of growing conditions in Europe calls for and permits more comprehensive evaluation of PGRFA across different environments;

WHEREAS it is of strategic importance for Europe to better utilize Plant Genetic Resources for Food and Agriculture to facilitate adaptation of European agriculture to climate change and to contribute towards the achievement of Sustainable Development Goals;

WHEREAS it is important not only to increase the use of genetic diversity in plant breeding, but also to increase the diversity of stakeholders in plant breeding, including private and public sectors, small and medium enterprises and participatory plant breeding actions;

WHEREAS there is an opportunity to build on existing networks for conservation and use of PGRFA and to develop a European PGRFA Evaluation Network which is open for participation by both private and public sectors in order to facilitate the exchange of data on evaluation in a standardized format;

Now therefore, the Steering Committee of the ECPGR hereby establishes the European PGRFA Evaluation Network in the form of Private/ Public Partnerships within the framework of the European Cooperative Programme for Plant Genetic Resources (ECPGR), in accordance with the following provisions.

01 Definitions

For the purposes of this Proposal –

- i) “AEGIS” means the European Genebank Integrated System;¹
- ii) “ECPGR” means the European Cooperative Programme for Plant Genetic Resources;
- iii) “EURISCO” means the European Search Catalogue for Plant Genetic Resources;²

¹ AEGIS entered into force in 2009 within the framework of ECPGR in order to improve coordination with respect to the conservation of PGRFA in Europe and to facilitate the exchange of PGRFA and related information among the countries and genebanks of Europe, and is now functioning to conserve genetically unique and important accessions for Europe and to make them available for breeding and research.

² EURISCO is a European cooperative mechanism, which provides information on nearly 2 million accessions of crop plants and their wild relatives, preserved *ex situ* by almost 400 institutes, based on a network of National Inventories of 43 member countries: EURISCO forms part of the Global Information System on Plant Genetic Resources for Food and Agriculture provided for under the International Treaty of Plant Genetic Resources for Food and Agriculture, and is now being extended to characterization and evaluation data.

- European Evaluation Network (EVA) approved by the ECPGR Steering Committee in Thessaloniki, May 2018

→ See Other PPT

EVA Network

- **Wheat and Barley**
- **Vegetables (carrot, lettuce, pepper)**

- German support
- European Private Public Partnerships to carry out targeted evaluation of genebank accessions
- Multiplication of material
- Multi-environment evaluation of same accessions across Europe (disease resistance)
- Use harmonized methods and standard protocols
- Genotyping of all accessions
- Provide evaluation data to EURISCO (embargo)
- Breeding companies evaluate at their cost
- Use of SMTA

ECPGR Mode of Operation of Phase X

- Two budget lines of similar amounts:
 1. Meetings
 2. Other activities

Budget line "Meetings"

- Principles:

1. Meetings should be planned in order to enable proactive Working Group members to collaborate **towards implementing ECPGR objectives**
2. The most important crop collections and crop distribution areas of given gene pools should be represented in the meetings, as far as possible.
3. Meetings should be organized according to criteria of efficiency and cost-effectiveness, also merging different WGs and taking advantage of synergies with other fora (EUCARPIA, COST, etc.)
4. Organization of meetings should be made in collaboration between WG Chairs and the Secretariat.
5. The country quota system guarantees a balanced participation.

Budget line "Meetings"

- Practice:
 1. Each WG can apply for funds to organize a meeting
 2. Applications can be submitted **at any time** to the ExCo through the Secretariat and should indicate: purpose of the meeting; criteria of efficiency and cost-effectiveness; possible synergies; names of participants; suggested date and location of the meeting
 3. Applications would be **processed within 4 weeks** from the submission

Budget line "Meetings"

- Limitations

1. The meetings can span through **maximum three nights**
2. **Only WG members** can be funded by ECPGR
3. **The country quota system applies.** One quota allows attending one meeting

Budget line "Other activities"

- General principle:

Additional activities directed to implement the ECPGR objectives will be funded through the Grant Scheme based on selection of proposals by the ExCo. There is no limitation whether these activities should be meetings or different actions and the country quota does not apply.

Budget line "Other activities"

- Practice:

Applications for other activities should be submitted by WG Chairs through the same **ECPGR Grant Scheme** procedure and rules adopted during Phase IX, except for the following **elements of simplification** which are introduced:

1. Meetings of Working Group members and/or other actions can be funded, with **no limitation regarding the ratio** between the budget used for meetings and for other actions
2. Meetings approved under this budget line are **not subject to country quota**
3. No limitations in the number of participants
4. Budget limitations depend on the rules of each call

Horizon 2020 - SFS 28 2018

GenRes Bridge

- ECPGR-related partners:
 - ECPGR Secretariat; BLE, Germany; WR, The Netherlands; BGCI, UK; INRA, France; Univ. Bham, UK; EURISCO, IPK, Germany; Pro Specie Rara, Switzerland
- ECPGR-related activities:
 - European GRFA integrated strategy
 - Peer-review system for conservation quality assurance
 - AEGIS: involving Botanic gardens; phytosanitary issues
 - EURISCO: Training workshops; linking information systems
 - GenRes Gateway
 - GenRes Journal



Thank you for your attention