

Draft Proposal of a European Evaluation Programme (ECPGR-EVA)

by BLE, 27.4.2017

1. Background

ECPGR is a collaborative Programme among most European countries, aimed at facilitating the long-term conservation on a cooperative basis and the increased utilization of plant genetic resources in Europe. The Programme, which is funded by the participating countries and is coordinated by a Secretariat hosted at Bioversity International, operates through broadly focused Networks. 34 European states have become a member of the ECPGR. The thirteenth meeting of the ECPGR Steering Committee (Vienna, December 2012) agreed on a long-term goal to which ECPGR contributes and six objectives that should be attributable to ECPGR as follows:

B.1 Long term goal

National, Sub-regional and Regional Programmes in Europe collaboratively, rationally and effectively conserve plant genetic resources for food and agriculture (PGRFA) *ex situ* and *in situ*, provide access and increase utilization.

B.2 Objectives

1. AEGIS is operational. Accessions in AEGIS are characterized and evaluated.
2. Quantity and quality of data in EURISCO, including *in situ* and on-farm data, have been increased. Functionality of EURISCO meets users' expectations.
3. *In situ* and on-farm conservation and management of priority crop wild relative (CWR) and landrace (LR) populations are implemented throughout Europe. Mechanisms are in place for more effective utilization of the conserved germplasm.
4. Commitment and regular resources of national governments are sustained or increased, and commitments and resources of the European Commission (EC), as well as of other potential donors towards ECPGR are increased.
5. Relations with users of germplasm are strengthened.
6. Organizational structure and secretarial support are adequate to effectively sustain the operations of ECPGR.

The **EURISCO** Web catalogue of ECPGR receives data from the European National Inventories (NI). It provides information at the accession level of PGR conserved in European genebanks or other collections. EURISCO is hosted at and maintained by IPK Gatersleben on behalf of the Secretariat. EURISCO is managed based on the principle that it should contain data, which can be made publicly available and can be used without limitation or restraint. The National Focal Points of the National Inventories should therefore not provide to EURISCO data, which do not fulfil these expectations.

The goal of **AEGIS** is to create A European Genebank Integrated System for plant genetic resources for food and agriculture, 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. AEGIS will allow all germplasm accessions and their related information registered to AEGIS to be readily available and easily accessible to users.

The Establishment of a European Evaluation Programme of PGRFA for AEGIS selected crops / accessions is an important step to make AEGIS operational and EURISCO more user-friendly for breeders. A Policy Guide (ECPGR 2009) and the current procedure is available at the ECPGR Website.

Selection requirements for AEGIS

1. Material under the management and control of the member countries and their Associate Members, in the public domain and offered by the associate members for inclusion into AEGIS.
2. Genetically unique within AEGIS, to the best available knowledge (i.e. genetically distinct accessions; assessment based on available data and/or on the recorded history of the accession).
3. Plant genetic resources for food and agriculture as defined in the International Treaty as well as medicinal and ornamental species.
4. European origin or introduced germplasm that is of actual or potential importance to Europe (for breeding, research, education or for historical and cultural reasons).

The final step of including accessions in the European Collection is their flagging in EURISCO as European Accessions by filling in the corresponding field ('AEGIS status'). This flagging is done by the EURISCO National Inventory Focal Point, under instructions from the National Coordinator.

The National Coordinators of AEGIS and the Associate Members (usually genebanks) have signed Memoranda of Understanding, including the task of making available non-confidential characterization and evaluation data.

The most recent development is the extension of EURISCO for characterization and evaluation (C&E) data. The data exchange format for C&E data (EPGRIS 3) was finalized. Some countries support the new module already by providing relevant data. Others are in the process to collect data for more accessions to improve the information of the National Inventories and EURISCO.

A European Evaluation Programme as a public-private-partnership focussing on AEGIS crops/accessions could also support (via AEGIS/EURISCO) the International Treaty with its Multilateral System (MLS) and its Global Information System (GLIS, Art. 17, see also SMTA Art. 5 Abs 2 and Art. 6.9) facilitating the Value Addition Chain within the GLIS for users of PGRFA.

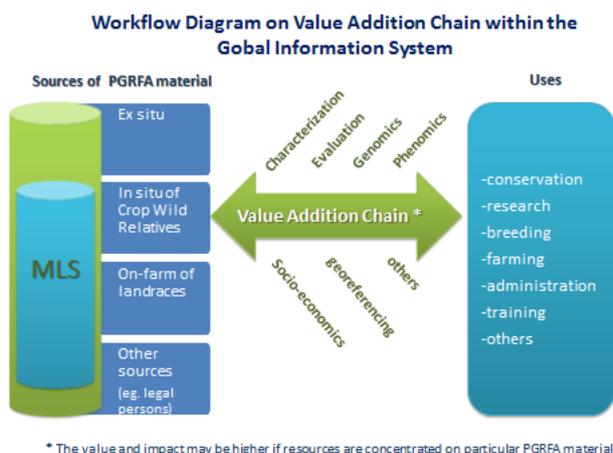


Figure 1: “Workflow Diagram on Value Addition Chain within the Global Information System”
(Source: IT/COGIS-1/15/Report)

2. Goals of a European Evaluation Programme

- Establishment of a network for the evaluation of PGRFA for AEGIS¹ selected crops / accessions
- Improvement of secondary evaluation on biotic and abiotic stresses with coordinated and collective evaluation with the same methods and standards
- Improvement of National Inventories and EURISCO exploring also solutions for the integration of phenotyping or genotyping information in C&E-data schemes
- Development of a dynamic information system for a coordinated C&E data acquisition and assessment

3. Creating a European Evaluation Programme

Different countries have different programmes and efforts for evaluating PGRFA, examples being presented during the workshop. Besides, there are huge amounts of genebank observation and other evaluation data.

First steps have been initiated to include C&E data (via a meta-data approach) in EURISCO. While evaluation data were collected for various crops, data from different sources, agro-environmental and test-conditions or different years cannot be compared (random and fragmented scores, no standard lines, etc.).

To improve the situation and the usefulness of the data for breeding research and breeding purposes the data mining technologies could be improved as well as the origin of the data itself by avoiding the afore-mentioned problems. A solution could be a well-coordinated and pre-organized European-wide collaborative approach by harmonizing separate evaluation programmes in a collaborative European Evaluation Programme (ECPGR-EVA) under common terms and conditions.

Such a European Evaluation Programme could be established as a public-private partnership. It could link activities of European institutions and stakeholders scattered over European countries and exploit synergies by participating along their respective comparative advantages.

AEGIS could provide terms and conditions to facilitate the identification of

- relevant crops and accessions to be evaluated
- relevant Associate members holding and offering AEGIS accessions and other stakeholders, including private sector entities, offering additional germplasm to be included
- “Evaluation partners” as supporting members, including private sector entities, to conduct the evaluation and additional activities

EURISCO could support ECPGR-EVA by

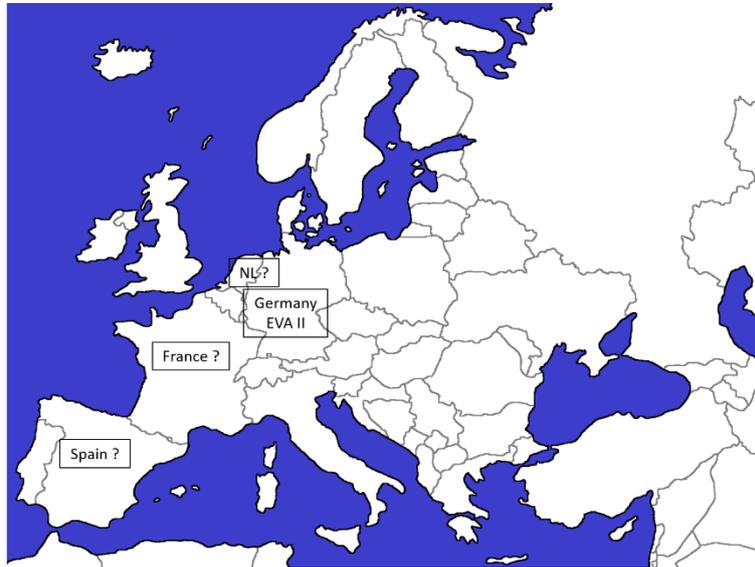
- creating a “supporting collaborative data platform”, open for ECPGR-EVA partners, to document their new observations and acquired data.
- making available non-confidential data under terms to be discussed (discretion period).

¹ *A Strategic Framework for the Implementation of a European Genebank Integrated System (AEGIS) – A Policy Guide* (ECPGR 2009)

Present situation: separate programmes generate value

Present situation

Every country has its own National Evaluation Programme.



Future situation: a collaborative programme could generate added value

Future vision

A collaborative programme should link separate national programmes to generate added value.

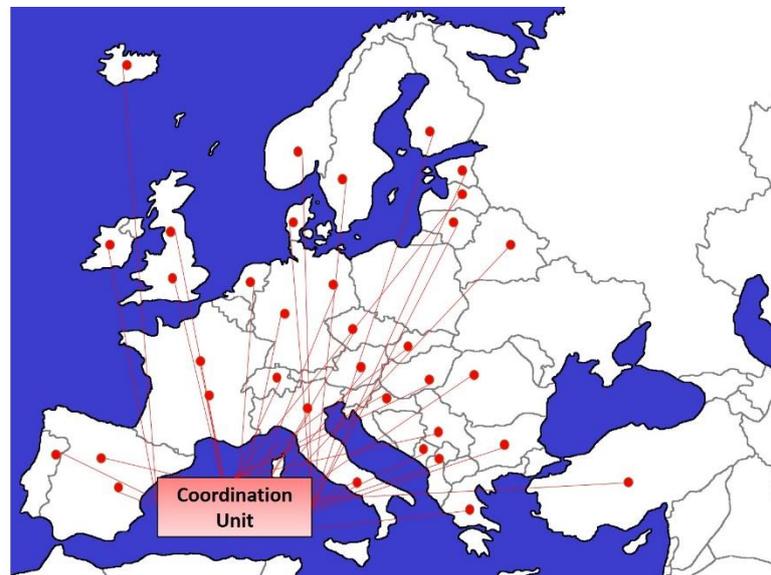


Figure 2: Geographic visualization of evaluation programmes in Europe

Additional items should be discussed and agreed upon by all partners involved:

- **AEGIS Associate partners** (e.g. genebanks) and other partners, including private sector entities, could multiply and provide interesting material (e.g. AEGIS-Accessions with non-confidential data available).
- **Public breeders** could provide technical advice for traits to be evaluated, project results and further data for AEGIS-accessions (analysis of traits for quality and chemical analysis, high throughput phenotyping etc).
- **Private breeders** could provide technical advice for traits to be evaluated, own material to be included in the tests on a voluntary basis, participate in evaluation of the trials with their own test sites and taking the scores (biotic and abiotic stresses)
- **National Inventory Focal Points** could facilitate the quality management of the data and their documentation in the respective national databases (where the National AEGIS-accessions are flagged).

A Coordination Unit would be needed to support the collaboration among all partners involved. The ECPGR Secretariat could be an option for this function.

The EURISCO host could support the data exchange between all partners involved by providing a separate intranet platform. Internal ECPGR-EVA data from the intranet platform could be handed-over to EURISCO and be made publicly available after an agreed period (e.g. 3 years).

A Memorandum of Understanding (MoU) would be elaborated and endorsed by all partners involved. The role of the AEGIS Coordinators and ECPGR-secretariat should be clarified.

4. Further steps

Workshop results documented by the ECPGR secretariat.

ECPGR could invite stakeholders to elaborate a proposal for ECPGR-EVA.

Application for funding e.g. in HORIZON 2020.