

# An update on aegis

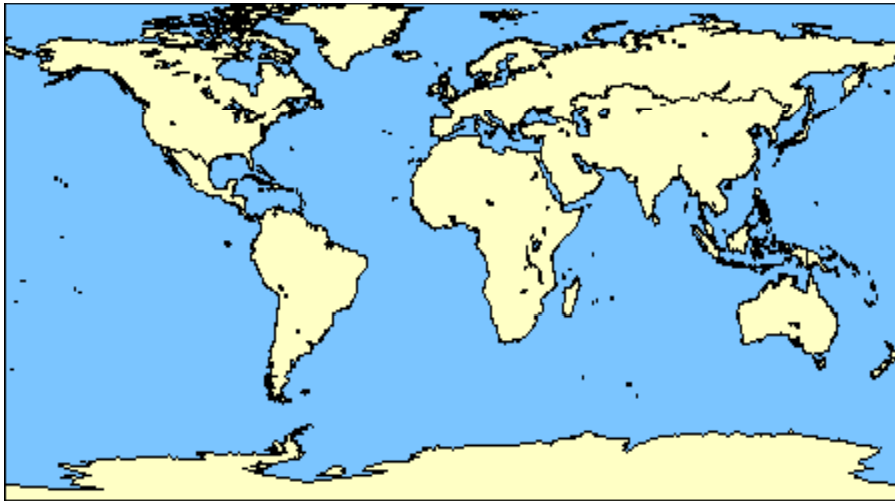
**A European Genebank Integrated System**

**<http://www.aegis.cgiar.org/>**

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# Background

## Worldwide



- 1,750 genebanks/collections
- Approx. 7.4 million accessions (SOW II, 2010)
- Estimated 25-30% unique
- Example: 471,222 *Hordeum* sp accessions in 80 countries (WIEWS, May 2011)

## Europe



- App. 625 genebanks/germplasm coll.
- > 2.47 million accessions (SOW II, 2010)
- 35-50% unique (estimate based on Eurisco data)
- Example: approx. 149,000 *Hordeum* accessions; held in 34 countries (WIEWS, May 2011)

# Background

- ECPGR:
  - Reported difficulties in PGR maintenance:
    - ✓ lack of long-term conservation facilities
    - ✓ insufficient safety-duplication
    - ✓ regeneration backlogs
    - ✓ inhomogeneous quality of material
- GPA and **International Treaty** call for “efficient and sustainable” system of *ex situ* conservation
- Substantial unwanted **duplication** of germplasm and efforts

# AEGIS Objectives

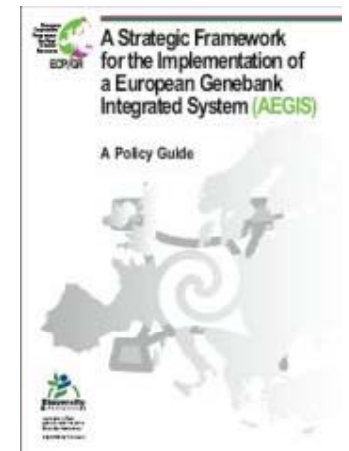
To create **A European Genebank Integrated System** for plant genetic resources for food and agriculture, aimed at **conserving the genetically unique and important accessions for Europe** and **making them available** for breeding and research. Such material will be safely conserved under conditions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

# Perceived Benefits of AEGIS

- Improved **security of germplasm** through long-term commitment and systematic safety-duplication
- Facilitated access to and **availability** of germplasm
- Improved **quality standards** of conserved material
- **Cost efficient** conservation activities
- **Reduced duplication** of germplasm material
- Improved **sharing of knowledge** and information

# Key components of AEGIS

1. A **Strategic Framework** for the Implementation of a European Genebank Integrated System - A Policy Guide
2. Formal **agreement** with countries (**MOU**) and institutions within countries (Associate Membership)
3. **European Collection**
4. **Quality System** (generic and crop specific standards; reporting; monitoring; capacity building)



# Key components of AEGIS

## 5. EURISCO as information portal for European Collection



### 35\*. AEGIS Status

(AEGISSTAT)

The coded status of an accession with regard to the European Genebank Integrated System (AEGIS).

Provides the information, whether the accession is conserved for AEGIS.

0 – not part of AEGIS

1 – part of AEGIS

If the AEGIS status is unknown, the field stays empty

## 6. Dedicated AEGIS website: <http://www.aegis.cgiar.org/>

# AEGIS Member countries

## Member countries

The following countries have signed the MoU:

1. **Albania** (6 May 2009)
2. **Azerbaijan** (16 July 2009) - Associate Members
3. **Bosnia and Herzegovina** (19 May 2010)
4. **Bulgaria** (2 December 2009) - Associate Members
5. **Croatia** (2 December 2009) - Associate Member
6. **Cyprus** (15 September 2009) - Associate Member
7. **Czech Republic** (23 July 2009)
8. **Denmark** (22 February 2010)
9. **Estonia** (22 May 2009) - Associate Members
10. **Finland** (2 December 2009)
11. **Georgia** (18 May 2009) - Associate Member
12. **Germany** (9 September 2009) - Associate Members
13. **Iceland** (22 February 2010)
14. **Ireland** (22 July 2009)
15. **Lithuania** (12 October 2010)
16. **Montenegro** (16 December 2010)
17. **The Netherlands** (28 May 2009) - Associate Members
18. **Norway** (17 August 2009)
19. **Poland** (17 May 2010)
20. **Portugal** (20 November 2009)
21. **Romania** (14 April 2010)
22. **Slovakia** (16 June 2009)
23. **Slovenia** (21 September 2009) - Associate Members
24. **Switzerland** (27 May 2009) - Associate Member
25. **Ukraine** (30 April 2009)
26. **United Kingdom** (18 June 2010) - Associate Member





# European Collection

## Selection of European Accessions

# The European Collection

- The European Collection will consist of **dispersed accessions (MAAs)**, i.e. a virtual European genebank
- Through signing the **MOU** countries accept responsibilities for **long-term conservation** and **availability of EA**, and to
- Conserve/manage according to **quality standards**
- **Conservation/management strategies** for each crop needs to be prepared by respective Crop WG/NCG and approved by SC

# General Principles for European Accessions

- AEGIS Members have discretionary rights to propose European Accessions;
- Proposed European Accessions must meet the agreed selection requirements;
- European accessions must be free from any third party obligations or restrictions;
- SMTA to be used for the transfer of Annex I crops;
- Transfer of Non-Annex I crops registered as European Accessions to be under the terms and conditions of the SMTA with explanatory note

# General Principles for European Accessions (Cont.)

- Management Standards for European Collection to be proposed for each crop gene pool by respective ECPGR Crop Working Group and approved by ECPGR Steering Committee;
- Associate Members of AEGIS to perform all specified activities according to agreed standards;
- Public domain accession-level information, as well as non-confidential characterization and evaluation data to be made available;
- Each European Accession to have an identified safety-duplicate stored under the same or better conditions than the original

# Selection requirements

1. Material under the management and control of the governments of 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).

## Selection criteria

- Need to be agreed by **each WG** for their specific crop(s)
- Used when deciding **which accession to accept** among two or more “quasi duplicate” or similar accessions / genotypes

# Simplified selection procedure of the European Accessions -1

1. WGs (or delegates) to elaborate a list from a crop “pool”, as documented either in EURISCO and/or in CCDB, regardless MoU, Associate members, offers from countries... → LIST OF CANDIDATE ACCESSIONS
2. Agree on selection procedure (ex.: Avena, Brassica, Forages, etc., see AEGIS web site)
  - All selected accessions must meet “selection requirements”
  - Not worry about “governmental control”
  - Mainly focus on genetic uniqueness and/or importance
  - Can exclude categories, such as: “hybrids”, “unknown accessions”
  - Not a “core collection”

## Simplified selection procedure of the European Accessions -2

3. Selection criteria (crop specific) are used to select MAAs among “duplicates” (also considerations of management practices)
4. WG sends list with candidate accessions to respective NCs for consideration of possible inclusion in the European Collection



## Simplified selection procedure of the European Accessions -3

5. NC, in close consultation with the holding institute(s), indicates to WG whether or not proposed accessions can be included in European Collection
  - Accessions proposed by the WG that are accepted by the country for inclusion, can be flagged in EURISCO as AEGIS Accessions
  - WG looks for alternative accessions not confirmed by NC and seeks acceptance for inclusion by a different holder

# **AEGIS Quality System (AQUAS)**

# Technical elements to be established

1. **Operational genebank manual** – all AEGIS Associate Members; based on genebank template (**finalized – AEGIS web site**)
2. **Generic operational standards** – Secretariat (cooperation with FAO; (**draft prepared by FAO; further process to be decided by Commission**))
3. **Agreed minimum crop specific technical standards** – all WGs (complementing generic standards)
4. **Quality management system procedures** – Secretariat; all WGs; Associate Members:
  - a. record keeping
  - b. reporting
  - c. monitoring (not policing, but guiding and advisory approach)

## Minimum crop standards

Working Groups are invited to initiate process to develop **crop specific technical minimum standards:**

- Collecting / Acquisition
- Regeneration / Propagation
- Drying and other preparatory steps
- Storage / field genebank / *in vitro* – cryo maintenance
- Seed quality and viability monitoring
- Distribution
- Characterization

# Status of crop standards

[http://aegis.cgiar.org/documents/crop\\_specific\\_documents.html](http://aegis.cgiar.org/documents/crop_specific_documents.html)

Drafts available for:

Allium (vegetatively prop.)

Avena

Beta

Brassica

Cucurbits

Forages

Prunus (cherry)

Solanaceae

# FP7 Research Infrastructure 2012 call - Draft text

***Plant Genetic Resources Centres.** A project under this topic should aim at integrating **and facilitating access to** the key European research infrastructures for genetic resources from crops, (**trees**) **and wild plants**. It would cover **native seed banks**, gene banks and germplasm collections as well as related data resources. It will facilitate **access to expertise and tools for the genotyping and phenotyping of accessions**.*

*The project will also develop activities for **the identification and rescue of endangered resources**. It should develop the necessary collaborations outside Europe, towards a global sharing of available resources.*

# EUROPLANTGENE proposal

- The ECPGR Steering Committee endorsed/recommended the **ECPGR Secretariat** to coordinate the preparation of a project proposals
- Expected publication of the call: **July 2011**
- Expected submission deadline: **End November 2011**
- Expected budget: ca. **Euro 10 million**
- Kick-off meeting with WP leaders: **Maccarese, 25-27 May (?)**
- **Many more partners to be defined. WP leaders can be approached.**

## Proposed structure of the project (i.e. the work packages)

1. Establishing, managing and providing access to the European PGR Collection (Jan Engels, ECPGR)
2. The European PGR search catalogue and information management system (Theo van Hintum, CGN, The Netherlands)
3. Genotyping and phenotyping and C&E of key European PGR resources (Germany ?)
4. Crop Wild Relatives (CWRs) identification, collecting, maintenance, evaluation and pre-breeding (Jose' Iriondo, Uni. Madrid)
5. Landraces identification, collecting, maintenance, evaluation and pre-breeding activities (Valeria Negri, Uni. Perugia)



## Proposed structure of the project (i.e. the work packages)

6. Genetic stocks identification and long-term maintenance (Morten Rasmussen, NordGen)
7. Quality management system (Merja Vetelainen, MTT, Finland)
8. Capacity building and training (Jelka Vozlic, Slovenia. AIS, Slovenia)
9. Policy dissemination and communication (Lorenzo Maggioni, ECPGR)
10. Executive and dynamic project management and coordination (ECPGR Secretariat)



Thank you  
for your  
attention!