



An update on the establishment of A European Genebank Integrated System



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Ex situ conservation Current situation in Europe

- Approx. 625 collection holdings in Europe
- Approx. 2.5 million accessions
(estimate level of duplication: 35-50%)
- Distributed across 45 countries = wealth of expertise, capacities, different environments



Reported difficulties with the current situation

Difficulties reported to properly maintain PGR:

- Lack of long-term conservation facilities
- Insufficient safety-duplication
- Regeneration backlogs
- Lack of well-defined technical standards

Difficulties reported to better utilize PGR:

- Relative isolation of genebanks from users' community
- Germplasm insufficiently evaluated
- Inhomogeneous quality of material and information
- Variable germplasm exchange conditions



International obligations

- Countries' obligations to conserve and make available biodiversity (CBD)
- Need to increase efficiency of conservation and to reduce duplication of efforts (GPA 1996)
- Call for efficient and sustainable system of *ex situ* conservation (International Treaty 2001)



Why AEGIS ?

- *Ex situ* conservation in Europe can be more efficient and more effective through a regional approach
(estimate of overall level of duplication is 35-50 %)
- No country or sub-region is self-sufficient regarding the germplasm and/or capacity to use PGR
- Efficient regional system can contribute to a global effort to conserve GR with a benefit-sharing approach



AEGIS main objective

Establishing a more efficient regional system of conservation and sustainable use of PGRFA through the setting up of a **European Collection**



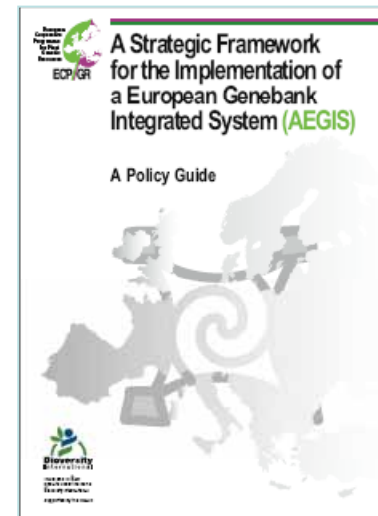
Expected AEGIS achievements

- Establishment and operation of an effective and cost-efficient PGR system:
 1. Conservation commitment secured (long-term)
 1. Quality standards adequately defined and applied
 2. Access to PGRFA and related information guaranteed



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. **AQUAS** - Quality management system





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 Web site:

<http://aegis.cgiar.org/home.html>



A European Genebank Integrated System

Home Page > About AEGIS

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About AEGIS

The AEGIS initiative is the brain child of the [European Cooperative Programme for Plant Genetic Resources \(ECPGR\)](#). At the present time, plant genetic resources for food and agriculture (PGRFA) in Europe are conserved in some 650 institutions scattered over about 43 European countries. While coordination of activities is carried out within the framework of the ECPGR and the ECPGR Crop Working Groups, each genebank basically operates on its own, providing for the conservation of a full range of crop germplasm important for agriculture in the area it serves.



Photo: V.Bozhkova

- ▣ [General Description of the AEGIS Initiative](#)
- ▣ [The Age of AEGIS \(J. Engels and L. Maggioni. 2011. Public Service Review: Science and Technology; Issue 7\)](#)

With this in mind, the countries of the European region believe that there is a need to improve coordination and share responsibilities with respect to the conservation of, management of and access to PGRFA in Europe by setting up AEGIS.

The legal mechanism for establishing AEGIS is the [Memorandum of Understanding \(MoU\)](#) entered into by eligible countries of the region and the European Commission. The MoU sets out their commitments as full Members of AEGIS and the main lines of AEGIS. To be eligible for membership, the countries listed must be members of ECPGR, and either Contracting Parties to the Treaty or otherwise willing to make PGRFA under their jurisdiction available under the conditions of the Treaty.

The MoU has come into force in July 2009. The MoU is supplemented by a series of Associate Member Agreements for the individual genebanks and other institutions that wish to become part of AEGIS.

- ▣ [Checklist for the implementation of the AEGIS Memorandum of Understanding \(MoU\) at National Level](#)

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RELATED INFORMATION

Highlights

First accessions formally included in the European Collection

The *Allium* Working Group has recently notified a few countries about the Group's agreement on a first batch of garlic accessions to be proposed as European Accessions. On the 12th of December 2011, Germany has flagged **61 garlic accessions in EURISCO as belonging to AEGIS**, thereby giving birth to the European Collection: [more information](#)

FP7-INFRASTRUCTURES-2012-1 Call

- ▣ [Submission of "Plant Gene Access" project proposal](#)

AEGIS Competitive Grant Scheme

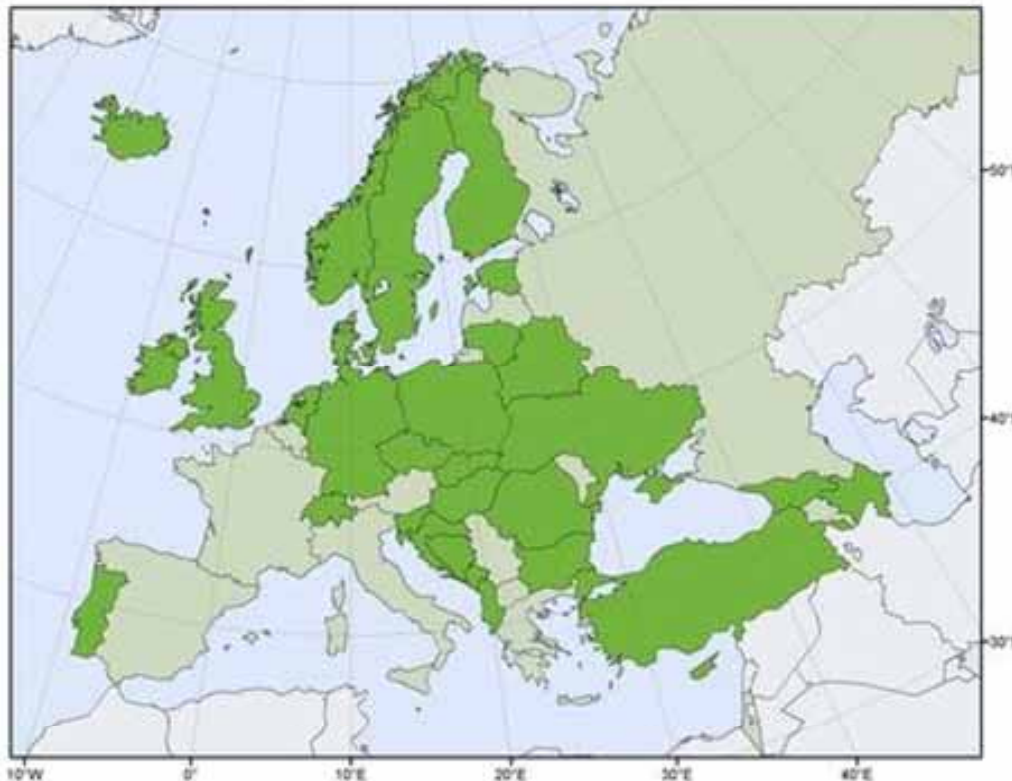
- ▣ [Outcomes of the second call for proposals](#)

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

Fourth Meeting of the ECPGR Working Group on Beta, 20-22 June 2012, Cappelle-en-Pévèle, France



AEGIS member countries



1. **Albania** (6 May 2009)
2. **Azerbaijan** (16 July 2009) - Associate Members
3. **Belarus** (2 November 2011) - Associate Members
4. **Bosnia and Herzegovina** (19 May 2010)
5. **Bulgaria** (2 December 2009) - Associate Members
6. **Croatia** (2 December 2009) - Associate Member
7. **Cyprus** (15 September 2009) - Associate Member
8. **Czech Republic** (23 July 2009) - Associate Members
9. **Denmark** (22 February 2010)
10. **Estonia** (22 May 2009) - Associate Members
11. **Finland** (2 December 2009)
12. **Georgia** (18 May 2009) - Associate Member
13. **Germany** (9 September 2009) - Associate Members
14. **Hungary** (22 November 2011) - Associate Member
15. **Iceland** (22 February 2010)
16. **Ireland** (22 July 2009)
17. **Lithuania** (12 October 2010)
18. **Montenegro** (16 December 2010)
19. **The Netherlands** (28 May 2009) - Associate Members
20. **Norway** (17 August 2009)
21. **Poland** (17 May 2010)
22. **Portugal** (20 November 2009)
23. **Romania** (14 April 2010) - Associate Member
24. **Slovakia** (16 June 2009) - Associate Member
25. **Slovenia** (21 September 2009) - Associate Members
26. **Sweden** (31 May 2011) - Associate Member
27. **Switzerland** (27 May 2009) - Associate Member
28. **Turkey** (14 November 2011) - Associate Member
29. **Ukraine** (30 April 2009)
30. **United Kingdom** (18 June 2010) - Associate Members



Associate Members

- 43 Associate Membership agreements received
- Associate Members per country:

Azerbaijan (2)

Belarus (8)

Bulgaria (1)

Croatia (1)

Cyprus (1)

Czech Republic (8)

Estonia (3)

Georgia (1)

Germany (3)

Hungary (1)

Netherlands (2)

Romania (1)

Slovakia (1)

Slovenia (5)

Sweden (1)

Switzerland (1)

Turkey (1)

United Kingdom (3)



The European Collection

- Composed of “unique” European Accessions (all crops), conserved for the long term by the AEGIS Associate Members as a decentralized collection
- Maintained under AEGIS Quality Standards
- Available under signature of SMTA



Scope of European Collection

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).



The European Collection

Has now been formally established and will hopefully steadily grow!

The European Collection

Species	European accessions	Holding genebanks	Countries of origin
<i>Allium sativum</i> L.	143	IPK, Germany (61) CRI, Czech Rep. (82)	16

<http://aegis.cgiar.org>



AEGIS Quality System (AQUAS)

Quality assurance based on the principles:

- Say what you do
- Do what you say
- Let an independent body check that you do what you say
- Correct and improve what you say you do



AQUAS principles

- Consensus
- Agreed minimum standards
- Capacity building
- As little bureaucratic as possible
- Monitoring system (not policing, but guiding and advisory approach)



AQUAS - technical elements

1. **Operational genebank manual** – all AEGIS Associate Members; based on **genebank template** (template finalized – AEGIS Web site; so far one manual received)
2. **Generic operational standards** – Secretariat (cooperation with FAO; inputs into draft also by ECPGR members; revised draft of November 2011 for orthodox seeds – planned for final approval by the FAO Commission in 2013)
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)**



Transfer of germplasm

Standard Material Transfer Agreement (SMTA) to be used for the transfer of **Annex I crops** **AND** of **Non-Annex I crops**, under the same terms and conditions, with explanatory note



AEGIS sustainability

- Self-funded (time, facilities and services) by European national programmes (also part of their commitment to implement the International Treaty)
- ECPGR funds
 - Secretariat
 - Small Grant Scheme
- Project funds
 - Submission of proposals to EU



Status of AEGIS development – Beta WG

European Collection: The WG has never had an opportunity to discuss AEGIS implementation. The first opportunity is its fourth meeting in 2012.

AQUAS: The Group has developed a seed increase protocol for wild and cultivated *Beta* germplasm. The Group has identified areas where a quality concept should be developed: germplasm acquisition; status of acquired material; regeneration; post-harvest; pre-storage; germination capacity and storage conditions.












Beta crop-specific standards

ECPGR Beta Working Group

Documents developed by the Working Group

Crop-specific standards

- ▣ Summary of elaborated elements of a quality concept of *Beta* conservation (Report of second meeting, Bologna 2002, pp. 14-16)  [PDF] (33 KB)
- ▣ Seed increase protocol (GENRES project 1996)  [PDF] (72 KB)
- ▣ Seed regeneration guidelines: available protocols can be found here, listed by country:
 -  Belgium (18 KB) (Agricultural Research Centre, CLO, Gent)
 -  Germany (50 KB) (JKI, Braunschweig)
 -  Hungary (20 KB) (Institute for Agrobotany, Tápiószele)
 -  Poland (76 KB) (Plant Breeding and Acclimatization Institute, Bydgoszcz)
 -  Russian Federation (22 KB) (VIR, St Petersburg)
 -  Turkey (25 KB) (AARI, Menemen - Izmir)
 -  United Kingdom (23 KB) (Genetic Resources Unit, HRI, Wellesbourne)



Proposed action points for WG workplan

1. Agree on process to identify Beta accessions for the European Collection
2. Compile first lists of possible AEGIS accessions
3. Decide whether crop-specific standards are needed beyond current FAO draft list of technical standards for seed crops/species and, in case, plan for their elaboration.



Thank you for your attention!

