An update on aegis

http://www.aegis.cgiar.org/

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Second Meeting of the Working Group on Cucurbits
8-10 November 2010, Tbilisi, Georgia
• 1,750 genebanks/collections
• Approx. 7 million accessions
• Estimated 2 million unique
• Example: approx. 148,000 *Avena* accessions (Source: SoW Report II)

• App. 625 genebanks/germplasm coll.
• > 2 million accessions
• 30-40% unique (estimate)
• Example: approx. 34,000 *Avena* accessions; held in 45 genebanks in 31 countries (Source: EURISCO, Oct. 2010)

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8-10 November 2010, Tbilisi, Georgia
Historical background

- Reported difficulties in PGR maintenance:
  - lack of long-term conservation facilities
  - insufficient safety-duplication
  - regeneration backlogs
  - inhomogeneous quality of material

- Discussed options for sharing conservation responsibilities in Europe already in 1998

- SC decided in 2003 to initiate an integrated European genebank system feasibility study (4 model crops) in 2004

- SC decided in 2006 to establish AEGIS
Selection of Model Crops

- **Seed propagated** material – annual
  - Annex I crops of ITPGRFA
  - *Avena*
    - selfing
  - *Brassica*
    - outcrossing

- **Vegetatively propagated** material – biennial and perennial
  - Non Annex I of ITPGRFA
  - *Allium*
    - (Veg. propag.)
  - *Prunus*

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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.

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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

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Establishment and milestones of AEGIS

1. ECPGR SC decision to initiate establishment of AEGIS in 2006
2. ECPGR Secretariat to coordinate; an AEGIS Coordinator appointed
5. Memorandum of Understanding (MOU) developed and sent for signature to all ECPGR member countries in 1st half of 2009
6. Currently 23 countries have signed MOU

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AEGIS Member Countries

The following countries have signed the MoU:

1. **Albania** (5 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** (27 July 2009)
15. **Lithuania** (12 October 2010)
16. **The Netherlands** (28 May 2009) - Associate Members
17. **Norway** (17 August 2009)
18. **Poland** (17 May 2010)
19. **Portugal** (20 November 2009)
20. **Romania** (14 April 2010)
21. **Slovakia** (16 June 2009)
22. **Slovenia** (21 September 2009) - Associate Members
23. **Switzerland** (27 May 2009) - Associate Member
24. **Ukraine** (30 April 2009)
25. **United Kingdom** (18 June 2010)
Establishment and milestones of AEGIS

7. Agreement on development of a Quality System (AQUAS); discussion paper

8. Agreement on requirements and criteria to select Most Appropriate Accessions (MAAs)

9. Competitive Small Grant Scheme launched (to facilitate establishment/operation process); 3 proposals awarded in 2010. New Call published on AEGIS Web site (deadline 31 December 2010)

10. EUROGENEBANK proposal submitted to FP7 Research Infrastructure Call; met threshold but not selected for funding

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Key components of AEGIS

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)

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Key components of AEGIS

- EURISCO as information portal for European Collection

![EURISCO](https://www.eurisco.org/)

**35°. AEGIS Status**

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


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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

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Main players are Crop Working Groups and Countries.

No precise definition of MAA exists (result of a process!)

Proposed simplified procedure to select MAAs (see handout)

Selection requirements have been approved by the Steering Committee.

The Selection criteria have been discussed by the model crop groups, without much divergence of opinion.

A WG agreement on selection criteria will be required for each crop or crop group.
AEGIS Quality System (AQUAS)

Proposed next steps

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AQUAS - Principles

Quality system to be based on the principles:

Quality assurance

– **Plan**: Say what you do
– **Do**: Do what you say
– **Check**: Let an independent body check that you do what you say
– **Act**: Correct and improve what you say you do

Decisions by consensus

Agreed minimum standards – involve partners; get “buy-in”

Capacity building plays a key role

Avoid unnecessary bureaucracy (pragmatic; not doctrinaire)

Effective guidance and advisory approach as monitoring

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Technical elements

Elements to be established:

**Operational genebank manual** – all AEGIS Associate Members; based on genebank template (advanced draft available, version 9)

**Generic operational standards** – Secretariat (based on manuals and suggestions by WGs; cooperation with FAO)

Agreed **minimum crop specific technical standards** – all WGs (complementing generic standards)

**Quality management system procedures** – Secretariat; all WG; Associate Members:

a. record keeping
b. reporting
c. monitoring (not policing, but guiding and advisory approach)

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Capacity building and oversight

Capacity building:
If standards are not met -> capacity building
(national funds or through projects)

Oversight:
First level monitoring of implementation of AQUAS by WGs
Second level monitoring across WGs by AEGIS Advisory Committee

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The way forward AQUAS - WGs

- Adopt and use the final template for a genebank manual (Associate members)
- Comment on generic technical standards (Autumn/Winter 2010)
- Initiation of process to develop crop specific technical minimum standards:
  a. Collecting / Acquisition
  b. Regeneration / Propagation
  c. Drying and other preparatory steps
  d. Storage / field genebank maintenance
  e. Seed quality and viability monitoring
  f. Distribution
  g. Characterization

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Revision of FAO-IPGRI Genebank Standards

• FAO Commission on Genetic Resources for Food and Agriculture requested at its 12th meeting a revision of the Genebank Standards
• Genebank Standards were published in 1994
• A number of technical and political changes require a revision
• State of the World report II highlights these changes
• An agreed process for updating the standards

Second Meeting of the Working Group on Cucurbitas
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# Table of contents of revised Genebank Standards

- Preamble
- Introduction
- Underlying principles
- Standards for:
  - Acquisition
    - Viability monitoring
    - Storage conditions
  - Regeneration
  - Characterization
  - Documentation
  - Distribution
  - Safety duplication
- Annexes

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Genebank Standards -
Agreed principles

• No distinction between “preferred” and “acceptable” standards

• One set of overall standards, defined as “targets”, and voluntary in nature
Thank you for your attention!

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