



# AEGIS:

An **update** and **guidance** for  
discussion by model crops

Jan Engels and Lorenzo Maggioni

**AEGIS model crops curators and db managers meeting  
1-3 July 2008, Radzików, Poland**

# Content of presentation



- A. Brief overview of AEGIS
- B. AEGIS procedures
- C. Role + responsibilities of model crop groups
  - 1. Process of identifying MAAs
  - 2. Developing a quality management system
  - 3. Miscellaneous items
- D. Details on MAA process
- E. Proposed priority actions for next Phase

# A. Why AEGIS?



To establish a European Collection

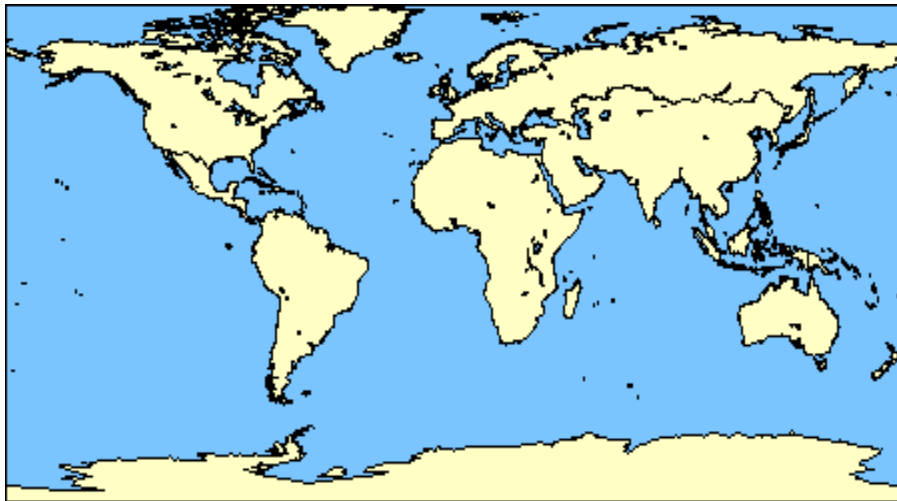
and...

- exploit collective cultural, scientific and environmental strengths and opportunities
- increase general conservation quality
- facilitate sharing of responsibilities
- allow a more rational and cost- efficient approaches
- overcome constraints and problems
- facilitate implementation of IT
- Others? AEGIS model crops curators and dbs managers meeting  
1-3 July 2008, Radzików, Poland

# A. Some facts and figures



## ■ Worldwide



- app. 1500 genebanks/germplasm coll.
- app. 6 million accessions
- Estimated 2 million unique

## ■ Europe



- app. 500 genebanks/germplasm coll.
- app. 2 million accessions
- Only 30-40% unique(?)
- > 40 European countries

# A. Perceived Benefits of AEGIS



- **Cost efficient** conservation activities
- **Reduced duplication** of germplasm material
- Improved **quality standards**
- Increased **effectiveness in regeneration**
- Facilitated **access and availability** of germplasm
- Improved **security of germplasm** through safety-duplication
- Improved **sharing of knowledge and information**

# A. Model Crops



❖ Seed propagated material – annual

❖ Annex I crops of ITPGRFA

■ *Avena spp*  
(entire  
genepool)



selfing

■ *Brassica spp*

For MAA: *B. rapa*



outcrossing

---

❖ Vegetatively propagated material – biennial and perennial

❖ Non Annex I of ITPGRFA

■ *Allium sp.*  
(vegetatively  
propagated)



■ *Prunus spp*  
(cherry)



AEGIS model crops curators and dbs managers meeting  
1-3 July 2008, Radzików, Poland

## B. AEGIS procedures



Broad agreement to establish an efficient, well coordinated and rational European Collection (Strategic Framework document) include:

- Process to identify **Most Appropriate Accessions**
- MAAs are by definition in **public domain** and **readily available**
- Countries to accept **long-term conservation responsibility** for MAAs; applying agreed **quality standards** and **QM system**
- Formalizing commitments through **Collective MOU**
- Whenever possible, using **existing ECPGR bodies** to oversee (=SC), coordinate (CWGs) and implement activities (NCs)
- Request **ECPGR Secretariat** to coordinate process

## B. AEGIS procedures (cont.)



cont.

- ECPGR SC provides “governance” to programme
- AEGIS Advisory Committee provides oversight
- Build on capacity of (national) genebanks
- Use existing ECPGR institutional framework
- Important role + responsibilities for Crop WGs
- Coordinating role by National Coordinators
- Critical role of EURISCO and CCDBs
- Specified role of model crops in this process

Mid-term ECPGR SC meeting 09.2006: Agreement to continue AEGIS process as an ECPGR Programme element

AEGIS model crops curators and dbs managers meeting  
1-3 July 2008, Radzików, Poland



## B. MOU for the establishment and operation of AEGIS - 1



### **Table of contents of this agreement of countries:**

1. Definitions
2. Establishment of AEGIS
3. Countries and regional organizations eligible for membership in AEGIS
4. Objectives of AEGIS
5. Relationship of AEGIS with ECPGR

## B. MOU for the establishment and operation of AEGIS - 2



6. Responsibilities of members of AEGIS;
7. Responsibilities of ECPGR National Coordinators;
8. General principles applicable to European Accessions under AEGIS
9. Associate membership of AEGIS;
- 10-12. Legal paragraphs (entry into force; termination; amendments etc.; and depositary)

**Annex:** Associate Membership Agreement between collaborating genebanks/others and Nat. Coord.

## C. Role and responsibilities as assigned by SC to model crops



### **Steering Committee decision 3:**

- a. Identification of Most Appropriate Accessions
- b. Development of criteria for such identification
- c. The development of quality systems
- d. Recommendations on how to involve all relevant stakeholders from the European region
- e. Provide a report addressing the above-mentioned activities
- f. An integrated report featuring a synthesis and generic conclusions on the further work of the four model crop groups is expected (**from the Secretariat**)

## C. Role and responsibilities as assigned by SC to model crops



### **Steering Committee decision 4:**

To make calculations as soon as possible of the **costs of the maintenance of the collections** of the model crops (to allow comparison of costs before and after introduction of AEGIS)

### **Steering Committee decision 5:**

Development of **draft quality management systems** for the four model crops. In kind contributions by genebanks and/or member states will enable this effort.

### **Steering Committee decision 6:**

To develop a **list** of **proposed specific accessions** of each of the model crops to be designated for their incorporation into the European Collections. **The four model crop groups are each requested to perform such exercise.**

## C. Details from MOU on roles and responsibilities of WGs



Regarding decision 3 points a and b, Article 5d of the draft Memorandum of Understanding states:

The **ECPGR Crop Working Groups** will provide **technical support** for the implementation of AEGIS, including:

- i. adopting **crop specific criteria** that are **consistent with the general criteria** adopted by the ECPGR Steering Committee for the selection of accessions to be proposed for registration as European Accessions;

## C. Details from MOU on roles and responsibilities of WGs



- ii. helping to **identify and making recommendations** to the participating countries regarding the accessions proposed for **registration as European Accessions**;
- iii. preparing and coordinating the implementation of **Crop Conservation Work Plans**;
- iv. **proposing standards** for the management of the **European Collection** on a crop gene pool specific basis for adoption by the ECPGR Steering Committee.

## C. Some “additional” role + responsibilities of WGs



1. Contribute to **survey** of capacities and availability of expertise, facilities, etc.
2. Prepare implementation of (**annual?**) **Crop Conservation Workplans (CCWs)**
3. Oversee/coordinate implementation of CCWs, including the following routine **activities**, e.g.:
  1. manage **central crop database**
  2. coordinate **collecting** activities
  3. coordinate **characterization/** evaluation
  4. other?
4. WG can delegate (part of) listed tasks to a **Coordinating European (Lead) Institution**



**AEGIS model crops curators and dbs managers meeting  
1-3 July 2008, Radzików, Poland**



## D. Concept of Most Appropriate Accession (MAA) - 1



The following slides are meant as an introduction to the next session after the coffee break

- The process has been initiated by all model crops
- There are no definite procedures (yet)
- Different interpretations of primary and secondary criteria have been made
- It is suggested to work towards an ECPGR agreement on the primary criteria and a WG agreement for each crop
- Additional priority selection criteria are suggested as a guide to countries to establish scope/priorities

**AEGIS model crops curators and dbs managers meeting  
1-3 July 2008, Radzików, Poland**

## D. Concept of Most Appropriate Accession (MAA) - 2



### Primary criteria:

- A. To-be-approved by Steering Committee
  - B. fully **discriminative**, i.e. all European Accessions will need to comply with all requirements below;
  - C. these criteria are **not crop-specific**
- 
1. Accessions in **public domain** (i.e. Annex I material that is in the MLS and non-Annex I material designated to AEGIS by governments or any other holder)
  2. **Genetically unique**, to the best available knowledge (i.e. genetically distinct accessions; assessment based on available data and/or on the recorded history of the accession)

## D. Concept of Most Appropriate Accession (MAA) - 3



3. **Agronomically** (incl. research material) and/or **historically** and/or **culturally** important
4. **Plant Genetic Resources**, incl. medicinal and ornamental spp., CWR and used wild species (i.e. **excluding forest genetic resources, non-plant agrobiodiversity** species, etc.)
5. **European origin or introduced germplasm** that is of **actual or potential** (breeding/research) **importance** to Europe

## D. Concept of Most Appropriate Accession (MAA) - 4



### Secondary criteria:

- A. Agreed by **each WG** for their specific crop(s)
- B. **not** fully discriminative
- C. used when deciding **which accession to accept** among two or more “quasi duplicate” or similar accessions;
- D. **WGs** to decide if any of these considerations has **prevalence** over the others, or that the selection should be the result of a **combination of two or more** secondary criteria

## D. Concept of Most Appropriate Accession (MAA) - 5



1. Maintained in “country of origin”
2. A known origin (collected and/or bred; pedigree data!?)
3. Comprehensiveness of passport information
4. Number of regeneration/multiplication cycles (Do we know?)
5. Health status (i.e. is the germplasm disease free?)
6. Existence of morphological/molecular characterization data

## D. Concept of Most Appropriate Accession (MAA) - 6



7. Existence of (agronomical) **evaluation data**
8. **Validated accession name** (particularly relevant for perennial clonal crops where the same name can be attributed to different accessions; history of individual accessions is important; special attention to be paid to synonyms and homonyms)
9. **Others?**

**APPLICATION OF CRITERIA WILL LARGELY DEPEND ON AVAILABILITY OF GOOD INFORMATION.**

AEGIS model crops curators and dbs managers meeting  
1-3 July 2008, Radzików, Poland

## D. Concept of Most Appropriate Accession (MAA) - 7



### **Draft priority selection criteria:**

- A. Meant as guide to countries/genebanks to establish scope/priorities of MAAs for individual crops
- B. WG are expected to scrutinize proposals, applying secondary criteria
- C. Thereafter, WGs propose MAAs to countries for final acceptance

## D. Concept of Most Appropriate Accession (MAA) - 8



### Priority selection criteria:

1. Accessions that have been collected or bred in the country where they are being conserved in one of its genebanks
2. Accessions of the crop gene pool in question that are crop wild relatives
3. Germplasm accessions that are traditional varieties and/or landraces
4. Germplasm accessions that represent old and/or obsolete varieties



## D. Concept of Most Appropriate Accession (MAA) - 9



### Priority selection criteria:

5. **Modern varieties**, bred with conventional methods
6. Accessions that are **breeding lines**
7. **Genetic stocks** of the crop genepool in question
8. Accessions that consist of **research material** like mapping populations, mutants, etc. – if different from 7 above

## D. Suggested actions by model crops regarding MAAs



1. Provide any **comments** on **primary selection criteria**
2. **Agree** on **secondary selection criteria**
3. Provide **comments** on **priority selection criteria**
4. **Propose** best procedure for agreeing on a list of **MAAs**, involving country partners and WG
5. **Produce** a **list of selected MAAs** (possibly after meeting, applying agreed criteria/procedures)

A faint, stylized background illustration of a globe with a spiral and a hand holding a tablet. The globe is light gray and features a dark gray spiral in the center. A hand is shown holding a tablet, with a line connecting it to the spiral. The overall style is minimalist and modern.

■ Thank you