# AEGIS

## A European framework for task-sharing in PGR conservation

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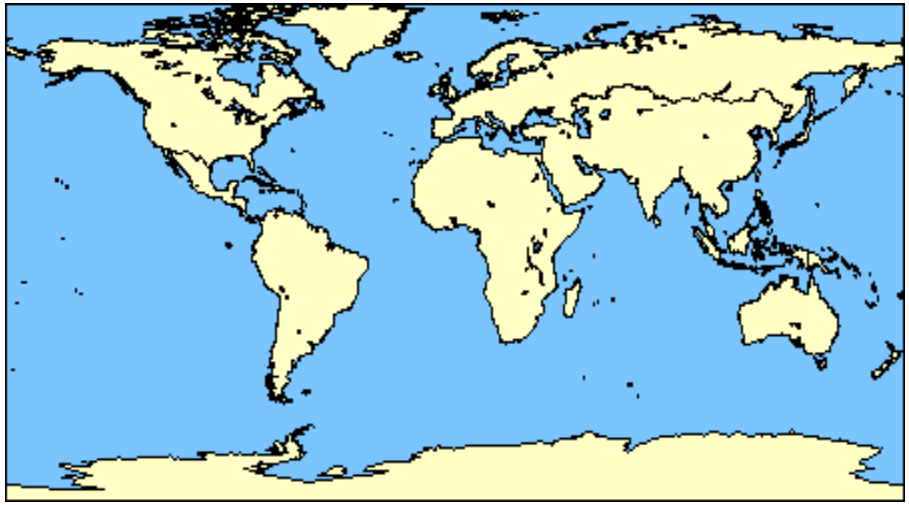
# Content of presentation

- Brief overview of AEGIS
- Key AEGIS activities:
  - Process of identifying MAAs
  - Developing quality management system
  - Managing dispersed European Collection
- Next steps in AEGIS implementation process
- Some issues

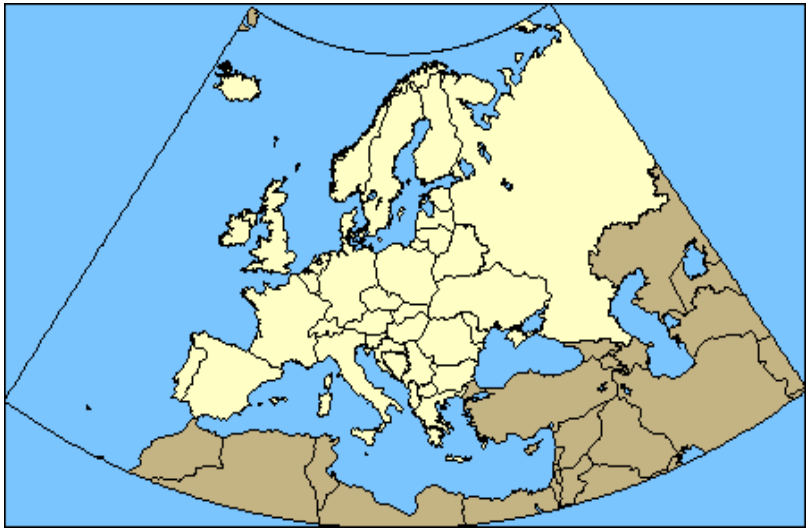
# Some facts and figures

- 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

# Background: ECPGR

- European Cooperative Programme for Plant Genetic Resources (ECPGR)
  - ➢Since 1980; Europe wide; most major crops/ groups
- ECPGR Crop Working Groups:
  - ➢Reported difficulties in PGR maintenance:
    - ✓lack of long-term conservation facilities
    - ✓insufficient safety-duplication
    - ✓regeneration backlogs
  - ➢Discussed options for sharing conservation responsibilities in Europe already in 1998

# Establishing AEGIS

- ECPGR Steering Committee (9th Meeting, Turkey 2003):
  - Decision to initiate and fund a feasibility study (mid 2004 – mid 2006)
  - Using 4 "model" crops (i.e. *Avena, Allium, Brassica and Prunus*)
  - Coordination Unit based at Bioversity International
- Initiation of AEGIS feasibility study: mid 2004
- Objectives of study (as basis for the establishment of AEGIS):
  - Assess different **approaches** and propose **models** for the system
  - Propose an **organizational structure**
  - Address **legal/political issues** in developing the system
  - Analyze the concept of **Most Appropriate Accession**
  - Draft guidelines on **quality standards** for long-term conservation

# Model Crops

- Seed propagated material – annual
- Annex I crops of ITPGRFA

- ***Avena***

selfing

AEGIS *Avena* group:
Germeier
Loskutov
Bulinska
Garcia
Koenig
Ryabchoun
Stehno

- ***Brassica***

**outcrossing**

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- Vegetatively propagated material – biennial and perennial
- Non Annex I of ITPGRFA

- ***Allium***

- ***Prunus***

# Summary of results so far

- Broad agreement to establish an efficient, well coordinated and rational European Collection; Strategic Framework document
- Identification of Most Appropriate Accessions
- To place MAAs in public domain; to be readily available
- Countries to accept long-term conservation responsibility for MAAs; using agreed quality standards
- Formalizing commitments through Collective MOU
- Whenever possible, using existing ECPGR bodies to oversee, coordinate and implement activities
- Request ECPGR Secretariat to coordinate process
- Mid-term ECPGR SC meeting: Agreement to continue AEGIS process as ECPGR Programme element

# Perceived Benefits of AEGIS

- Improved **collaboration** between countries
- **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**

# Findings (1)

## Organizational structures and institutional relationships

- ECPGR SC provides “governance”
- AEGIS Advisory Committee provides oversight
- Local Task Force ensures active Bioversity involvement
- 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

# Findings (2)

## Organizational structures and institutional relationships

- European Collection "system" encompasses following responsibilities:
  1. Long-term conservation of public domain AEGIS Accessions (including routine operations such as viability testing, regeneration, characterization/ evaluation; services of entire Network!)
  2. Safety duplication
  3. Routine germplasm management activities (e.g. collecting/exchange; regeneration; info management)
  4. Germplasm distribution

# Findings (3)

## Organizational structures and institutional relationships

- European Coordinating Lead Institution (for each crop genepool)
  - Operate under Crop WG
  - Implement (part of delegated) crop conservation action plans, e.g.:
    - manage **central crop database**
    - coordinate **collecting** activities
    - coordinate **characterization**/ evaluation
    - EU programme spoke's person

# Concept of Most Appropriate Accession (MAA) - 1

## Primary criteria:

A. fully discriminative, i.e. accepted accessions will need to comply with all requirements below;

B. these criteria are not crop-specific

1. In the 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 (i.e. genetically distinct accessions; assessment based on available data and/or on the recorded history of the accession)
3. Agronomically (incl. research material) and/or historically/culturally important

# Concept of Most Appropriate Accession (MAA) - 2

4. Plant Genetic Resources, incl. medicinal and ornamental spp., and CWR (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

**Secondary criteria**:

A. not fully discriminative
B. might be crop-specific;
C. used when deciding which accession to accept among two or more "quasi duplicate" or similar accessions;

# Concept of Most Appropriate Accession (MAA) - 3

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

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?)

# Concept of Most Appropriate Accession (MAA) - 4

6. Existence of morphological/molecular characterization data
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.

# Genebank quality system

General aspects:

1. Focus on genebank operational (e.g. seed storage, regeneration protocols, etc) and not on product related aspects (e.g. quality of composition of collection, info supply)
2. Quality assurance is based on principle that you a) say what you do; b) you do what you say; and c) you let an independent body check that you do what you say (i.e. an audit).
3. ECPGR will develop a quality assurance system.
4. Each genebank should write down its current procedures
5. This will be a good basis for discussing technical standards and a good feedback mechanism aimed at improving quality!

# Current implementation status of AEGIS

- Strategic Framework paper finalized by Bioversity Local Task Force, based on findings of 4 model crop groups, in close consultation with AEGIS SC and being endorsed by ECPGR SC
- General description of AEGIS goal, scope, procedures, benefits and its governance (= ECPGR SC)
- Draft MOU for establishment of AEGIS shared with ECPGR SC
- Agreed implementation process (as described above), which is seen as important contribution to IT implementation
- AEGIS coordination unit established
- TORs and composition of new Advisory Committee, Local Task Force and Coordinator established
- AEGIS adopted as integral part of ECPGR programme
- Funding comes from regular ECPGR budget

# Steps ahead in making AEGIS operational (1)

- Concluding MOU with each of the countries to formalize responsibilities and arrangements
- Develop model institutional contract
- Development of Quality Management System for long-term conservation of the AEGIS Collection
- Survey institutional capacities and service conditions
- Assessing economic implications of AEGIS implementation
- Work closely with 4 model crops in implementing above steps
- Use other crop opportunities to implement AEGIS (e.g. artichokes; *Vitis* spp)
- Develop EU strategy on long-term support of AEGIS
- Lobby for and seek other sources of funding to carrying out AEGIS implementation process.

# Steps ahead in making AEGIS operational (2)

Foreseen responsibilities of Crop Working Groups:

- Establish criteria for Most Appropriate Accessions
- Establish draft list of European Accessions
- Oversee process to identify AEGIS Accessions that will form the European Collection, incl. sharing information on identified accessions with respective National Coordinators as suggestions for “designation”
- Draft and agree on crop specific technical standards and assess applicability of generic management standards
- Prepare and coordinate implementation of conservation action plan
- Improve data quality and coverage of AEGIS accessions
- Survey institutes (i.e. capacities and availability)

# Some issues and considerations for SEEDNet whilst developing AEGIS

- How best to use the existence of sub-regional network?
- Use sub-regional mechanisms to speed up implementation:
  - Reaching agreements at the policy level
  - Coordinating inputs to various WGs
  - Identifying jointly MAAs
  - Sharing responsibilities amongst sub-regional partners
  - Identifying services that sub-region can provide to the Region
- Important opportunity to implement International Treaty

- Thank you