

EUROPEAN COOPERATIVE PROGRAMME FOR PLANT GENETIC RESOURCES (ECPGR) SECRETARY, **LORENZO MAGGIONI**, AND **JAN ENGELS**, CO-ORDINATOR OF AEGIS, OUTLINE THE PROGRAMME'S PRIORITIES

Networking for plant genetic resources

Since the domestication of wild plants, farmers have more or less consciously manipulated natural diversity under their specific conditions by selecting new combinations of genes and giving rise to uncounted forms and varieties of crops. Plant breeding is the scientific process that makes use of the existing genetic variation to improve yield, to direct and to speed up adaptation to ever-changing environmental conditions, including resistance or tolerance to pests and diseases, as well as to improve food quality. Agricultural production and world food security are therefore directly and strongly dependent on plant genetic diversity. Thus, this precious biological resource needs to be preserved and remain available for present and future generations.

Several international agreements and undertakings are dedicated to plant genetic resources for food and agriculture (PGRFA). The Convention on Biological Diversity (CBD), entered into force in December 1993, today includes 193 parties, who are bound to the objectives of the conservation of biological diversity, sustainable use of its components and the fair and equitable sharing of the benefits arising out of their utilisation.

The International Treaty on Plant Genetic Resources for Food and Agriculture (IT), which entered into force in June 2004, is focusing on the specific case of conservation and sustainable use of PGRFA. This treaty, currently ratified by 131 contracting parties, is calling for international co-operation on conservation and sustainable use and has promoted and created a Multilateral System (MLS) to facilitate an open exchange of genetic resources and a fair sharing of the benefits arising from the use of these resources, fully in harmony with the CBD.

The Second Global Plan of Action for PGRFA, adopted by the FAO Council in November 2011, is the main reference document for national, regional



Lorenzo Maggioni



Jan Engels,
AEGIS Co-ordinator

and global efforts to conserve and use plant genetic resources for food and agriculture.

Networks

The role of networks is stressed by all the above-mentioned international agreements, as being essential in furthering their respective objectives. On the one hand, there is an inevitable interdependence among countries with respect to their need to have access to PGRFA and information held by others. On the other hand, networks not only facilitate the exchange of PGRFA, but also provide a platform for scientific discussion, sharing responsibilities and information, technology transfer and research collaboration.

Within the European region, the European Cooperative Programme for Plant Genetic Resources (ECPGR)¹ was founded in 1980 on the basis of recommendations of the United Nations Development Programme (UNDP), the Food and Agriculture Organization of the United Nations (FAO) and the Genebank Committee of the European Association for Research on Plant Breeding (EUCARPIA).

ECPGR is a collaborative programme among most European countries, aimed at contributing to national, sub-regional and regional programmes in Europe to rationally and effectively conserve *ex situ* and *in situ* PGRFA and facilitate their utilisation. The programme, which is entirely financed by the member countries, is co-ordinated by a small secretariat, currently hosted by Bioversity International and operating through working groups focused on crops and themes. ECPGR is guided by a steering committee composed of the national co-ordinators of its member countries (currently 43).

Expansion

Over the years, ECPGR has expanded from the initial six working groups to the current 21. Thus, it has been possible to enlarge the scope

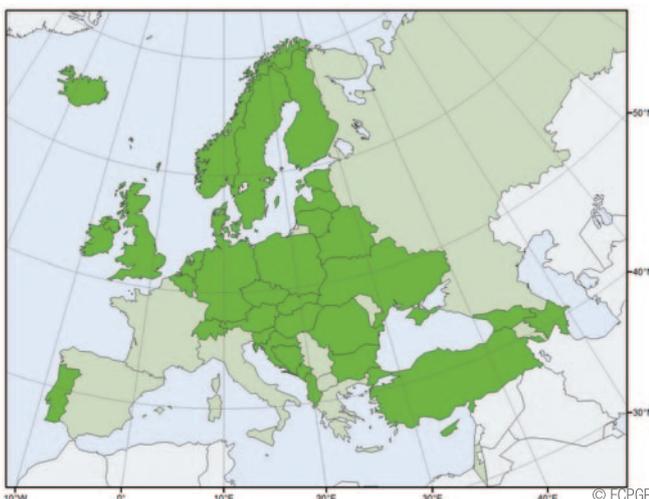


Fig. 1 AEGIS member countries



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of collaboration directly to a community of hundreds of experts, creating a vivid framework of collaboration, which has been conducive to carrying out joint undertakings through task sharing. Since the start of the programme, the focus of collaborative actions has been on the documentation of the collections conserved in European genebanks. Crop databases with agreed standards have been created and, more recently, the European Internet Search Catalogue (EURISCO) of *ex situ* collections has been established, offering information related to more than one million accessions conserved in more than 300 institutions throughout Europe.²

EURISCO is an online compilation of 43 national inventories, which has been greatly facilitated by the harmonisation of data exchange protocols obtained through the consensus building approach utilised by ECPGR. In addition, several joint initiatives have been implemented by the programme throughout the past 30 years, including the establishment of common technical standards for documentation and conservation, organising training courses, joint collecting missions, emergency rescues of threatened germplasm, study exchange

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visits, organisation of workshops and production of technical reports and other publications.

The various ECPGR working groups have created opportunities for members to exchange project ideas, discuss and investigate potential funding opportunities and forge project partnerships. As such, the ECPGR working groups have been successful platforms to develop joint project proposals for funding by the European Union. Through such successful projects, the ECPGR programme has been able to leverage nearly €19m between 1996 and 2011. Most of the projects were funded by the European Commission through two 'GENRES' regulations (1467/94 and 870/2004).

Co-ordination

Despite the abovementioned achievements and funding support by the EU for the conservation and use of PGRFA, there was still a rather low level of actual co-ordination on conservation activities throughout Europe. Consequently, in 2004 the ECPGR started to work towards the establishment of an effective, efficient and rational European conservation system, with an initial focus on existing *ex situ* genebank collections in European countries.

The goal of AEGIS³ is to create a European genebank integrated system for PGRFA, aimed at conserving the genetically unique and important accessions in Europe and making them available for breeding and research.⁴ Such material will be safely conserved under conditions that ensure genetic integrity and viability in the long term. The perceived benefits of this initiative consist of improved security of germplasm through long term commitment and systematic safety duplication; facilitated access to and availability of high quality germplasm; agreed



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EURISCO is also planning to expand to information related to the diversity existing in landraces cultivated on farms and to wild species growing in natural habitats with important potential for our crops. Concepts related to conservation and the management of *in situ* wild relatives and on farm landraces are being developed, aiming to formulate an agreed strategy for a joint effort in Europe.

A further objective that ECPGR intends to fulfil in the next five years is the strengthening of the relationship between genebanks and the users of germplasm. Genebanks should live up to the expectations of breeders, researchers and farmers and be able to offer services and material that will be appreciated and used.

quality standards for conservation and use; more cost efficient conservation activities; reduced duplication of germplasm material; and improved sharing of knowledge and information.

AEGIS

European countries become members of AEGIS by subscribing to a memorandum of understanding, which is deposited at Bioversity International, as the organisation responsible for providing secretariat services for the ECPGR. As of December 2013, 33 countries were members of AEGIS (see Fig. 1) and more are undergoing the necessary procedures to obtain the governmental signature to join.

As an important step towards the implementation of AEGIS, its member countries are in the process of selecting individual accessions as European Accessions, for which they are prepared to assume long term conservation responsibilities according to agreed technical standards; ensure the safety duplication; and to make the European Accessions available along with the pertinent information, in accordance with the principles defined in the Standard Material Transfer Agreement (SMTA) of the IT.

This SMTA will not only be used for the distribution of Annex I crops, but the same terms and conditions will also apply to the transfer of non-Annex I crops, thereby extending the multilateral system in Europe to cover all the crops. At present, the European Collection already includes over 11,000 accessions from three countries.

Expectations

ECPGR is now entering Phase IX (2014-2018), with renewed objectives and a new mode of operation. The further development of AEGIS remains a strong priority. The European Collection is expected to grow, with the sharing of conservation extended to all of its members.

The expectation is that breeders and other users will be able to have easy access to well characterised and well maintained samples from any of the associate member institutions in Europe that collectively hold the dispersed European Collection and under equal terms. The quantity and quality of data contained in the EURISCO catalogue, including characterisation and evaluation data of useful traits is expected to improve.

European strategy

In parallel with Phase IX of ECPGR, the European Commission is launching its EU Framework Programme for Research and Innovation (Horizon 2020) and a reformed Common Agricultural Policy (CAP). As part of these new scenarios, the European Union recognises genetic resources as a pillar of our natural capital and the basis for food security.

There is also scope for developing a European strategy for the conservation of genetic resources in food, agriculture and forestry, as well as to improve co-ordination at EU level.

ECPGR, with its vast networking experience as well as its technical and political expertise, is well positioned to offer its contribution to this process and to actually assume more responsibilities for a co-ordinated involvement of the wider European region.

¹ <http://www.ecpgr.cgiar.org/>

² <http://eurisco.ecpgr.org/>

³ <http://www.aegis.cgiar.org>

⁴ ECPGR. 2009. A Strategic Framework for the implementation of a European Genebank Integrated System (AEGIS). A Policy Guide. European Cooperative Programme for Plant Genetic Resources (ECPGR). Bioversity International, Rome, Italy. <http://www.bioversityinternational.org/publications/publications/publication/publication/-0a7ad9ed4e.html>

Lorenzo Maggioni
ECPGR Secretary

Jan Engels
AEGIS Co-ordinator

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