In situ and On-farm Conservation Network

WGs: On-farm Conservation and Management; Wild species Conservation in Genetic Reserves.

The ***In situ*** **and On-farm Conservation Network Coordinating Group** consisted of seven members: Nigel Maxted, United Kingdom (Network Coordinator); Lothar Frese, Germany; Paul Freudenthaler, Austria; José Iriondo, Spain; Valeria Negri, Italy; Zdeněk Stehno, Czech Republic; and Jens Weibull, Sweden.

The Network has been involved in the preparation of the project proposal for "Novel characterization of crop wild relatives and landraces resources as a basis for improved crop breeding" **(PGR Secure)**, submitted in January 2010 to the EU FP7 funding scheme for Collaborative Projects (KBBE.2010.1.1-03 – Characterization of biodiversity resources for crop wild relatives to improve crops by breeding). The project aimed to research novel characterization techniques and conservation strategies for European crop wild relative and landrace diversity, and to further enhance crop improvement by breeders, as a means of underpinning European food security in the face of climate change. Partners in the project included: University of Birmingham, UK (Coordinator); Plant Research International, The Netherlands; ServiceXS BV, University of Nottingham, UK; Bioversity International; University of Perugia, Italy; Centre for Genetic Resources, The Netherlands; Julius Kühn-Institut, Germany; Nordiskt Genresurscenter, Sweden; MTT Agrifood Research, Finland; and Universidad Rey Juan Carlos, Spain. To achieve its aim, the project will include four research themes:

1. Novel characterization techniques, including: (1a) Genomics, phenotyping and metabolomics, (1b) Transcriptomics, (1c) Focused Identification of Germplasm Strategy.
2. Crop Wild Relatives (CWR) and Landraces (LR) conservation, including: (2a) Europe-wide CWR inventory; (2b) Exemplar national CWR inventories; (2c) European CWR strategy; (2d) Europe-wide LR inventory; (2e) Exemplar national LR inventories; (2f) European LR strategy.
3. Facilitating breeders' CWR and LR use, including: (3a) Identifying breeders' needs; (3b) Meeting breeders' needs; (3c) Integration of conservation and user communities.
4. Informatics development, including: (4a) CWR and LR inventory information Web availability; (4b) Novel characterization information Web availability; (4c) Inter-information system operability.

Through the use of the ECPGR listerver, the ECPGR Secretariat helped the project coordinator to obtain letters of support for the project proposal from the ECPGR National Coordinators. It is expected that the project will base its implementation on the Network of ECPGR *in situ*/on-farm National Inventory Focal Points, the respective National Inventories and EURISCO as European Inventory for Plant Genetic Resources (*ex situ* and *in situ*/on-farm). The project is expected to involve 42 European countries, as well as large and smaller European plant breeding companies.

The second coordination meeting of the project "An Integrated European *In Situ* Management Work plan: Implementing Genetic Reserves and On Farm Concepts (**AEGRO**)" took place in Almeria, Spain on 14–16 September 2009. The project is funded by the European Commission, DG AGRI within the framework of Council Regulation 870/2004. AEGRO is an initiative of the members of the Coordinating Group of the ECPGR *In situ* and On-farm Conservation Network in collaboration with the ECPGR Crop Networks. The project addresses issues relating to the development of national crop wild relatives and landrace conservation strategies, data sourcing, data acquisition and modelling, use of GIS technologies, and aspects of practical site management and monitoring. It further pursues the common goal of halting the loss of genetic diversity in European crop wild relatives and landraces, thus helping the PGR community meet its obligations under the European Strategy for Plant Conservation 2008-2014.

Methods for planning of landrace on-farm conservation activities were developed, an inventory of landrace occurrences in Italy created, criteria to be taken into account for giving priority among areas defined, a landrace management strategy formulated and the strategy tested. It allowed selecting

those areas that include the maximum landrace and ecological diversity as well. In addition, this exemplary work formed the basis of workpackage 2 of the PGR Secure project.

A Web-based helpdesk has been developed and tested by project partners. The CWR *In Situ* Strategy Helpdesk is a guide and information facility for National Programmes, research institutes, NGOs, protected area managers or individuals involved in the development of a crop wild relative (CWR) *in situ* conservation strategy. It provides a list of CWR data types and sources. The helpdesk information was made publicly available in October 2009 (http://aegro.bafz.de/index.php?id=188).

The Crop Wild Relatives Information System – Population Level Information System (CWRIS-PLIS) is also online. This is a core functionality of the AEGRO project (http://aegro.bafz.de/index.php?id=168). Four independent modules are being developed for *Avena*, *Beta* (http://aegro.bafz.de/aegroprod_beta/home.seam), *Brassica* and *Prunus,* allowing the search for occurrence within a specific species. PLIS combines different data sources and uses harmonized data. It allows: (i) search for occurrences by taxon information; (ii) search for occurrences by geographic information; (iii) combined search for occurrences by geographic information (Eurostat administrative units, NUTS, LAU) and Natura 2000 protected areas. A survey data recording tool was developed to assist *in situ* management of *Beta* species using the software tool kit CyberTracker. This tool kit, as well as a crop-specific application, is freely available.

Four model crops (oat, beet, brassicas and cherry) are used to test the genetic reserve conservation technique. Advanced drafts of genetic reserve guidelines were produced by all model crop project teams describing concepts concerning the establishment of genetic reserves. These guidelines contain a list of candidate sites recommended for the establishment of genetic reserves for individual species and occurrences. The documents will be circulated within the ECPGR Working Groups with a request for discussion and feedback.

The CWR helpdesk, the Population Level Information System, the landrace management strategy, genetic reserves guidelines for a number of model crops as well as the identification of Most Appropriate Areas for genetic reserves establishment (a task to be performed in the last year of the project) is a contribution of AEGRO to the *in situ* and on-farm management activities of the ECPGR Programme.

As part of the EC project Diverseeds ("Networking on conservation and use of plant genetic resources in Europe and Asia"), and in collaboration with the ECPGR Secretariat, the University of Perugia, Italy progressed in the compilation of a Web database of on-farm research and coordination institutions and their contact points in Europe. This database is aimed at facilitating the exchange of information among on-farm and in-garden institutional stakeholders. At the end of 2009, a prototype database was available on the University of Perugia Web site (http://www.sharinginformation.eu/).

The following **Network publications** were printed and published on the Web:

- Vetelainen M, Negri V and Maxted N. 2009. European landraces: on-farm conservation, management and use. Bioversity Technical Bulletin no. 15. http://www.bioversityinternational.org/publications/publications/publication/issue/european_landraces_on_farm_conservation_management_and_use-1.html
- Bailey A, Eyzaguirre P, Maggioni L. 2009. Crop genetic resources in European Home Gardens. Proceedings of a Workshop, 3-4 October 2007, Ljubljana, Slovenia. http://www.bioversityinternational.org/publications/publications/publication/issue/crop_genetic_resources_in_european_home_gardens_proceedings_of_a_workshop_3_4_october_2007_ljublj.html

The following **report** was made available on the Web:

- Report of a Task Force on On-farm Conservation and Management. Third Meeting, 2-3 October 2007, Ljubljana, Slovenia.
  http://www.ecpgr.cgiar.org/Networks/Insitu_onfarm/Rep_TF_OnfarmCons_final.pdf

Outlook for 2010 and 2011: activities planned by the Network include the organization of a Symposium for the establishment of European genetic reserves for CWR and landraces (Funchal, Madeira, Portugal, 13-16 September 2010), i.e. a joint meeting of the *In situ* and On-farm Conservation Network and the EU project AGRI GENRES 057 – AEGRO. As part of the symposium, the two Working Groups of the Network will meet for the first time in the new "Working Group"

arrangement. In association with the IUCN CWR Specialist Group, many CWR Working Group members will attend an IUCN Red List Workshop in Cascais, Portugal in mid-April 2010, with the aim of completing the IUCN Species Red List documentation for a number of European CWR species.

The **PGR Secure** project is expected to start in February 2011. It will build on the knowledge and skills of the *In situ* Network and ECPGR *in situ*/on-farm National Inventory Focal Points, and on two workshops focusing respectively on CWR and LR conservation and use which are to be organized in the Summer of 2011.