

European Cooperative Programme for Plant Genetic Resources (ECPGR)

Phase VIII (2009-2013) 2010 Progress Report

CONTENTS

Summary	2
1. Introduction	3
2. Implementation of ECPGR Phase VIII	3
3. Activities carried out within the Networks	3
3.1. Cereals Network	3
3.2. Forages Network	
3.3. Fruit Network	
3.4. Oil and Protein Crops Network	
3.5. Sugar, Starch and Fibre Crops Network	
3.7. Documentation and Information Network	7
3.8. In situ and On-farm Conservation Network	
3.9. Inter-regional Cooperation Network	10
4. AEGIS initiative for "A European Genebank Integrated System"	11
5. Links with other Networks and initiatives	12
6. ECPGR External Review	13
7. 12th (extraordinary) Steering Committee meeting	13
8. Publications	15
8.1. Publications produced in 2010	15
8.2. Publications in preparation in 2010	
9. ECPGR meetings held in 2010	16
10. Coordinating Secretariat and Bioversity International	16

SUMMARY

The second year of Phase VIII was characterized by the efforts made for the preparation and implementation of the Independent External Review. The Review was completed and the results presented and discussed at the 12th (extraordinary) Meeting of the Steering Committee. A new goal and objectives for ECPGR were agreed upon and an Executive Committee composed of five National Coordinators was established. The Steering Committee agreed on a timeframe to reflect on appropriate major changes that ECPGR may need to undergo in the near future in response to the recommendations of the Review Panel. These will be discussed on the basis of an "Options paper" that the Executive Committee has been mandated to prepare for the next Steering Committee meeting in 2012.

Membership of ECPGR remained at the level of 34 signed formal memberships and 3 additional countries which are providing contributions. Belarus joined ECPGR as a new member.

The membership in the initiative for "A European Genebank Integrated System (AEGIS)" increased from 17 to 26 countries and the Associate Member Agreements between National Coordinators and institutions holding *ex situ* accessions increased from 7 to 19.

The AEGIS Grant Scheme started with the approval for funding of three proposals and a second call was launched, which received 17 submitted proposals. The template for an "Operational Genebank Manual" was completed, tested and approved by the Advisory Committee and it was made available for use by the genebanks. A contribution was offered by the Networks to the process led by FAO of updating the *Genebank Standards*. This document that might be adopted for AEGIS should be completed in 2011. Although a simplified procedure for the definition of European Accessions has been proposed by the Secretariat, no country has yet designated a list of European Accessions. Discussions on crop-specific standards have started in the Working Groups, but have not yet reached conclusive agreements.

The year 2010 was the second year of activity of a two-year project funded by the Global Crop Diversity Trust for the regeneration and safety-duplication of over 5000 threatened accessions identified in ten European countries. The 12 partner institutions involved in the project have successfully regenerated 70% of the accessions planned, i.e. 985 grain legume accessions (chickpea, common bean, cowpea, faba bean, grasspea and lentil) and 2675 cereal accessions (*Aegilops*, barley, maize, sorghum and wheat).

The Cereals Network organized surveys and collecting missions of wild *Avena* species in Sicily and Andalusia. The *Avena* Working Group (WG) contributed to the activities of the AVEQ project on "*Avena* Genetic Resources for Quality in Human consumption", which resulted in the evaluation of a working collection of about 600 accessions.

The Forages WG held its tenth meeting in Germany and worked towards rationalizing and improving the effectiveness of the forage databases. The use of the agreed standards for regeneration was monitored and found to be largely applied.

The *Prunus* WG met in Italy for the eighth time, presenting the improvements and new features of the database and elaborating procedures and guidelines (agreements on use of molecular markers, standards for conservation, safety-duplication methodology and characterization standards).

The second meeting of the WG on Fibre Crops (Flax and Hemp) was held in the Czech Republic, mainly discussing the ways to improve the central databases and defining recommendations for the implementation of AEGIS, starting from the selection of flax accessions.

The project on *Origanum* characterization, promoted by the WG on Medicinal and Aromatic Plants was started with the participation of 19 partners who sent samples to be analysed by the University of Veterinary Medicine in Vienna, Austria.

The Vegetables Network held meetings of the *Brassica* and Cucurbits WGs. The *Brassica* WG focused on the analysis of the database to identify unique material and also focused on the status of conservation and availability of wild relatives' accessions in genebanks. Characterization activities on crop wild relatives at the University of Catania and on *B. rapa* at the N.I. Vavilov Research Institute of Plant Industry (VIR) are ongoing. The Cucurbits WG agreed to prepare guidelines for regeneration of accessions and agreed on criteria for the selection of European Accessions.

The Documentation and Information Network Coordinating Group defined a road map for the inclusion of characterization and evaluation data in EURISCO. The European catalogue Web interface was improved with the implementation of new search functions. A new EURISCO Data Sharing Agreement was finalized and sent for signature to all the countries contributing data.

The *In situ* and On-farm Conservation Network held the final meeting of the AEGRO project in Madeira, Portugal, where methodologies for *in situ* management of crop wild relatives were presented. Tools and methodologies to create national inventories were also discussed. Priorities for the future were decided by means of a horizon scanning exercise.

1. Introduction

This is the second Annual Progress Report of Phase VIII (2009-2013), covering the period from 1 January to 31 December 2010.

This document aims to put on record all the relevant events which occurred during 2010 for the purpose of reporting on the progress of Phase VIII to the Steering Committee and to the Implementing Agencies. The Steering Committee (SC) has been kept informed on a regular basis through the dedicated "Steering Committee listserver", which is managed by the Nordic Genetic Resource Center (NordGen), as well as through the dedicated ECPGR Web site. An extraordinary progress report was also prepared for the 12th Meeting of the Steering Committee, 14-16 December 2010, Bratislava, Slovakia, and much of the information reported here was also provided in that document.

2. IMPLEMENTATION OF ECPGR PHASE VIII

By end of December 2010, 34 countries had signed the Letter of Agreement for Phase VIII. Three other countries had not signed the Letter of Agreement but had, nonetheless, started to pay annual contributions for Phase VIII. Belarus joined ECPGR as a new member in 2010.

3. ACTIVITIES CARRIED OUT WITHIN THE NETWORKS

Planned meetings and activities and their dates are reflected and kept up-to-date in the Networks' budget plans (available from Network's online each Web page (http://www.ecpgr.cgiar.org/networks.html) and the upcoming meetings (http://www.ecpgr.cgiar.org/meetings/future meetings.html).

3.1. Cereals Network

Working Groups: Avena, Barley and Wheat.

The Cereals Network Coordinating Group (NCG) consisted of seven members: Helmut Knüpffer, Germany (Network Coordinator); Iva Faberová, Czech Republic; Christoph Germeier, Germany; Marja Jalli, Finland; Andreas Katsiotis, Greece; Gert Kleijer, Switzerland; and Marcin Zaczynski, Poland.

The Sixth Meeting of the Working Group on *Avena* was held in Bucharest, Romania, 21-22 October 2010, jointly with the final meeting of the GEN RES project AVEQ on "*Avena* Genetic Resources for Quality in Human Consumption".

The Group benefited from its involvement in the AVEQ project, which resulted in the evaluation of a working collection of about 600 accessions. Regeneration and multiplication protocols for wild *Avena* species were tested during the project. Protocols on regeneration of wild *Avena* to be agreed for the AEGIS Quality System (AQUAS) were planned to be drafted by a Group's Task Force. The ECPGR *Avena* Database is facing the challenge of integrating the *in situ* data produced by the AEGRO project ("An Integrated European In Situ Management Workplan: Implementing Genetic Reserves and On Farm Concepts") and the evaluation data generated by the AVEQ project. The advantages of the decentralized approach of a crop database were stressed, but this will require attracting new funds to make it sustainable, while the prevailing tendency of the European Information Landscape is moving towards centralized approaches (EURISCO and GENESYS, the gateway to genetic resources of the Global Information on Germplasm Accessions (GIGA) project).

The Group identified pre-breeding of *A. strigosa* and of other wild species as a topic of interest for future joint project proposals.

Survey missions to collect and monitor wild oat populations for *in situ* conservation were carried out in Sicily and Andalusia. Ideal conditions for *in situ* management would be the presence of several populations in protected ecosystems. In Sicily, pine trees have been planted at some *A. insularis* sites; this will result in loss of the *A. insularis* habitat. In Spain, none of the sites where *A. murphyi* is found are protected, but with proper management of the pasture land, *A. murphyi* can still thrive in the area:

recommendations to farmers are needed in order to maintain satisfactory population levels. The local authorities were informed of the importance of existing populations. New samples were collected in Sicily and deposited in genebanks (see article in Newsletter for Europe, Issue No. 40, July 2010).

The ECPGR project for urgent regeneration and safety-duplication activities, funded by the Global Crop Diversity Trust, started its operation in 2009 and was concluded in 2010. In the case of cereals, six countries were involved in the regeneration of wheat or *Aegilops* (Armenia, Belarus, Bulgaria, Georgia, Hungary and Israel), five countries in the regeneration of barley (Armenia, Belarus, Greece, Hungary and Israel), four countries in the regeneration of maize (Azerbaijan, Bulgaria, Georgia and Hungary) and three countries in the regeneration of sorghum (Azerbaijan, Bulgaria and Georgia). Out of the 3956 cereal accessions that were expected to be regenerated with the support of the project, 2675 (68%) were successfully regenerated. The project will continue on a no-cost extension basis in Armenia and Bulgaria in order to complete regeneration of accessions that was not successful in previous years. All the accessions are planned to be deposited during 2011 for safety-duplication at a CGIAR Centre and at Svalbard.

The Cereals Network submitted two proposals for funding to the second call of the AEGIS Grant scheme. These were prepared by partners from Ukraine (wheat) and Sweden (rye).

Outlook for 2011: the Network workplan for 2011 includes the Barley WG meeting, which is planned in Nicosia, Cyprus in May 2011. An ad hoc meeting of the *Avena* WG to discuss the selection of accessions for AEGIS and the Quality System is planned for autumn 2011.

3.2. Forages Network

Working Group: Forages.

The **Forages Network Coordinating Group** composition was revised in May 2010 and consisted of six members: Merja Veteläinen, Finland (Network Coordinator); Beat Boller, Switzerland; Petter Marum, Norway; Vladimir Meglič, Slovenia; Ian Thomas, United Kingdom and Evelin Willner, Germany.

The **Tenth Meeting of the Working Group on Forages** was held on 27–29 April 2010, Poel Island, Germany.

Considering the inefficient fragmentation of the Forages Databases (23), it was agreed to merge some of the databases and reduce them to 12. The Central Crop Database managers are leading the process of selecting accessions for the European Collection and steps to make progress in the identification of these accessions were defined. This process is expected to be facilitated by submitting a proposal to the AEGIS Grant Scheme. The status of safety-duplication was monitored, with the intention to increase its coverage. The use of the agreed standards for regeneration was also monitored and it was verified that these are being followed to a very large extent by the members. Inclusion of characterization and evaluation (C&E) data in the Forages Databases can be made possible with technical advice from NordGen or the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK). National experiences were shared, specifically regarding inventory of on-farm activities and diversity studies.

The Forages Network submitted one **proposal for funding to the second call of the AEGIS Grant Scheme**. This was prepared by the partner from Finland, focused on the establishment of the European Forages Collection.

Outlook for 2011: the Network's workplan does not include further meetings or budgeted activities, since the Network's budget for Phase VIII was only sufficient to hold one meeting.

3.3. Fruit Network

Working Groups: *Malus/Pyrus, Prunus* and *Vitis*.

The Fruit Network Coordinating Group consisted of seven members: Marc Lateur, Belgium and Emilie Balsemin, France (Interim Co-Coordinators); Daniela Giovannini, Italy, replacing Daniela Benediková, Slovakia as of September 2010; Stein Harald Hjeltnes, Norway; Erika Maul, Germany; Jesus Ortiz, Spain and Matthew Ordidge, United Kingdom.

The Eighth Meeting of the Working Group on *Prunus* was held on 7–9 September 2010 in Forlì, Italy. Lists of agreed molecular markers for fingerprinting cherry, apple and pear accessions are being finalized, as well as guidelines for taking photographs of the accessions.

Survey of the collections revealed that the main problems that the *Prunus* accessions are facing are health status (because of virus infections) and lack of funds for the maintenance of the collections due to decreasing national budgets for activities such as identification, collecting, introduction, evaluation and regeneration; some very old field collections need urgent regeneration. In order to overcome this situation with possible solutions, a model based on successful examples of national networks of fruit tree conservation will be described and proposed for adoption.

The ECPGR *Prunus* Database was improved with new search features and the possibility of hosting phenotypic and genotypic data.

The procedure to select accessions for the European Collection has been tested with cherry accessions and the Group is in the process of finalizing agreed selection criteria.

Specific standards for conservation of *Prunus* accessions were discussed and a consensus document is in the process of being finalized. The task of preparing a specific safety-duplication methodology was assigned to a small Task Force. A new version of the primary descriptors for almond, apricot, cherry, plums and peaches was proposed.

The Network is planning for the harmonization of the four European Fruit Databases and the sharing of tools to assist in assessing trueness-to-type of the European accessions. The French National Institute for Agronomic Research (INRA)-Bordeaux is completing the ECPGR *Prunus* Database structure with ECPGR project funds and extending it to other *Prunus* crops. In order to share efforts and harmonize the Fruit Databases, INRA-Bordeaux offered to share this new *Prunus* Database version as the new structure for the ECPGR *Pyrus* Database.

Outlook for 2011: The *Prunus* Database structure will be tested for adoption by the *Pyrus* Database. *Malus* and *Vitis* Databases also need to plan for their further development with ECPGR project funds.

3.4. Oil and Protein Crops Network

Working Group: Grain Legumes.

The **Oil and Protein Crops Network Coordinating Group** consisted of four members: Mike Ambrose, United Kingdom (Network Coordinator); Siyka Angelova, Bulgaria; Andrea Carboni, Italy; and Gérard Duc, France.

The Fifth Meeting of the Working Group on Grain Legumes was planned to be held in Antalya, Turkey on 22-23 April 2010, including the ad hoc meeting of the Grain Legume Database Managers. Unfortunately, the meeting was cancelled at the last minute due to the air transport difficulties caused by ash from the Icelandic volcano. One third of the Network's budget was lost since a number of air tickets were no longer refundable. Presentations prepared for the meeting were uploaded on the ECPGR Web site, including reporting updates of the Grain Legume Databases and notes on national experiences. The WG intended to mainly focus on defining its engagement towards AEGIS, with particular interest in the AQUAS elements related to the regeneration of allogamous species.

The **ECPGR project for urgent regeneration and safety-duplication activities**, funded by the Global Crop Diversity Trust, started its operations in 2009. In the case of grain legumes, six countries

(Albania, Azerbaijan, Bulgaria, Georgia, Hungary and Portugal) were involved in the regeneration of chickpea, common bean, cowpea, faba bean, grasspea and lentil. Of the 1255 grain legume accessions that are expected to be regenerated with support of the project, 985 (78%) were successfully regenerated.

A proposal submitted by the Oil and Protein Crops Network for funding to the AEGIS Grant Scheme in 2009 was successful and started in 2010. The proposal, "Towards comprehensive pea germplasm management for future use", is coordinated by Agritec Plant Research, Czech Republic. In 2010, a proposal was submitted for funding to the second call of the grant scheme. This was prepared by partners from Ukraine (evaluation of chickpea collection).

Outlook for 2011: In accordance with the Steering Committee decision, the Fifth Meeting of the Grain Legumes Working Group, which could not take place due to air transport difficulties in May 2010, can be rescheduled for 2011 or later.

3.5. Sugar, Starch and Fibre Crops Network

Working Groups: Beta; Fibre Crops (Flax and Hemp); Medicinal and Aromatic Plants (MAPs); Potato.

The **Sugar, Starch and Fibre Crops Network Coordinating Group** consisted of four members: Lothar Frese, Germany (Network Coordinator until October 2009); Roel Hoekstra, The Netherlands (Network Coordinator as of October 2009); Martin Pavelek, Czech Republic; and Ana Maria Barata, Portugal.

The Second Meeting of the Working Group on Fibre Crops (Flax and Hemp) was held on 7-9 July 2010 in Šumperk – Velké Losiny, Czech Republic.

The Group is developing the International Flax Database, even though current financial resources are insufficient at the managing institute in the Czech Republic to operate this database online. The development of the ECPGR Hemp Database was reconfirmed as an agreed responsibility of Consiglio per la Ricerca e la Sperimentazione in Agricoltura - Centro di Ricerca per le Colture Industriali (CRA-CIN), Rovigo, Italy. Preliminary recommendations for the implementation of AEGIS include focusing on the procedures to select flax accessions for the European Collection, under the coordination of the Chair.

In order to collaborate with the *In situ* Network, two Members of the Network attended the **final meeting of the AEGRO project** and First Meeting of the On-farm Conservation and Management Working Group and Wild Species Conservation in Genetic Reserves Working Group in Madeira, Portugal, in September 2010.

The project on **inventory and sampling of** *Origanum vulgare* L. populations was started in June 2010. Samples were collected by 19 partners and sent to the University of Veterinary Medicine in Vienna, Austria, where they are being evaluated through molecular and chemical analysis. The data collected within the Oregano Project will contribute to the selection of oregano accessions to be included in the European Collection according to the AEGIS concept.

The Sugar, Starch and Fibre Crops Network submitted three **proposals for funding to the second call of the AEGIS Grant Scheme**. These were prepared by partners from The Netherlands (potato), Russian Federation (flax) and Ukraine (hemp).

Outlook for 2011: The meeting of the Potato WG that was planned for 2011 was cancelled, since the Group thought that it would be more effective to use the allocated funds for molecular analysis of potato clones; the Steering Committee endorsed this decision.

3.6. Vegetables Network

Working Groups: Allium, Brassica, Cucurbits, Leafy Vegetables, Solanaceae and Umbellifer Crops.

The **Vegetables Network Coordinating Group** consisted of 11 members: Marie-Christine Daunay, France (Network Coordinator), Willem van Dooijeweert, The Netherlands (Vice-Coordinator); Dave Astley, United Kingdom; Noortje Bas, The Netherlands; Ferdinando Branca, Italy; Maria José Díez, Spain; Emmanuel Geoffriau, France; Joachim Keller, Germany; Charlotte Allender, United Kingdom; Katerina Karlová-Smékalová, Czech Republic; and Rob van Treuren, The Netherlands.

The **Fourth Meeting** of the **Working Group on** *Brassica* was held on 2-3 March 2010, Linguaglossa, Italy. The ECPGR *Brassica* Database (Bras-EDB) has been updated and has been used to flag core collections of *B. oleracea*, *B. rapa*, *B. napus* and *B. carinata*. A duplicate search function was developed and used to identify duplicates within *B. rapa* accessions (preliminarily, 30% duplicates were identified) and it will be extended to search among *B. oleracea* accessions. A Working Group Task Force was formed, with the aim of verifying whether the genepool of wild *Brassica* can be considered safely conserved in *ex situ* genebanks or if further collecting is needed, to identify the accessions requiring multiplication and to prepare a detailed time-frame for such multiplication.

Various populations of wild brassicas obtained from genebanks were planted in Catania, Italy, in the same environmental conditions for comparison, with the aim of establishing a core collection of well characterized and diverse wild accessions. The material is available (either seed or freeze-dried samples) to anyone interested in carrying out characterization or evaluation work.

Ninety-seven accessions of *B. rapa* were selected from the Bras-EDB for characterization through ECPGR project funds. The N.I. Vavilov Research Institute of Plant Industry (VIR), Russian Federation, volunteered to carry out the characterization for morphological and phenological descriptors.

The **Second Meeting of the Working Group on Cucurbits** was held on 9-11 November 2010, in Tbilisi, Georgia. The Group agreed to prepare guidelines for regeneration of cucumber, melon, watermelon and *Cucurbita*. The criteria for selecting European Accessions were agreed and the analysis of the ECPGR Cucurbits Database in this regard is expected to take place in 2011 after further improvement of data quality in the database.

Two proposals submitted by the Vegetables Network for funding to the AEGIS Grant Scheme in 2009 were successful and started in 2010. The proposal on "Assessment of Unique Material in the European Collections of Umbellifer Crops" is coordinated by the University of Warwick, United Kingdom and the proposal on "Cryopreservation of young inflorescence bases in bolting garlic for germplasm storage" is coordinated by the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Germany.

On behalf of the Vegetables Network, M.C. Daunay gave a presentation on "ECPGR Achievements and Perspectives" to the 28th International Horticulture Congress (IHC), held in Lisbon, Portugal on 22-27 August 2010. A paper was also prepared to be published in the Congress' proceedings (see section on Publications).

Outlook for 2011: Meetings planned for 2011 include the WGs on Umbellifer Crops (March, Germany), *Allium* (September, Greece) and Leafy Vegetables (November, Slovenia, to be confirmed). The Solanaceae WG meeting to be held in Turkey was postponed to 2012, date to be decided).

3.7. Documentation and Information Network

The **Documentation and Information Network Coordinating Group** consisted of 9 members: Theo van Hintum, The Netherlands (Network Coordinator as of February 2010); Frank Begemann, Germany (Network Coordinator till February 2010); Iva Faberová, Czech Republic; Helmut Knüpffer, Germany; Jonas Nordling, Sweden (NordGen); Idin Fazlic, Bosnia and Herzegovina (SEEDNet); Ahmet Semsettin Tan, Turkey; and Ian Thomas, United Kingdom. Four additional *ex officio* representatives were Sónia Dias and Lorenzo Maggioni, ECPGR Secretariat, Rome; Michael Mackay,

Bioversity International, Rome; and José Iriondo, Spain (*In situ* and On-farm Conservation Network representative).

The Documentation and Information (D&I) Network Coordinating Group (NCG) had its Fourth Meeting on 17-18 February 2010 in Maccarese (Rome), Italy. A "road map to the inclusion of C&E data in EURISCO" was drafted, outlining a recommended process to eventually enable provision of European Characterization and Evaluation (C&E) data to EURISCO. Given the obvious complementarity of GENESYS and EURISCO, it was considered desirable to make the two approaches converge. A number of action points were formulated to proceed in this direction, but their implementation proved to be rather slow. Following the improvements made to the EURISCO Internet functions, development of components to host C&E data into EURISCO is planned for early 2011. Advice was given on EURISCO development and a workplan for EURISCO activities until September 2010 was approved, noting that the Internet improvement task had the highest priority.

The problems regarding errors in taxonomic nomenclature and synonymy in EURISCO were analysed and simple solutions proposed. A scientific paper about these issues, and the taxonomic composition of the material in EURISCO was published (van Hintum and Knüpffer 2010, see section on Publications).

EURISCO in 2010

The catalogue contains data from 41 National Inventories and 313 collection holdings. The total number of accessions, as of 9 December 2010, was 1 083 447. These accessions were listed as wild/weedy species (10%), landraces (25%), advanced cultivars (19%), breeding/research material (15%). The status of the remaining 31% is unknown.

The EURISCO Internet functionalities were improved, implementing new search options and introducing various features that improve effectiveness and user-friendliness. For example, searches by "National Inventory" were made possible and the possibility to download all multi-crop passport descriptors (MCPD) + EURISCO fields was introduced.

A new EURISCO Data Sharing Agreement (DSA) was finalized, after the expiration in the end of 2009 of the previous one. These documents were sent to all the National Focal Points (NFPs) and National Coordinators for signature by the respective country authorities and will take effect from the date of signature until 2020. New Terms of Use were also prepared by the legal experts and made available on the Web site.

The EURISCO Web site has been entirely revised and transferred into Typo3 environment. These changes will be visible in 2011 at the time of the launching of the new Web site.

Taxonomic and geographic information system (GIS) reports were sent to NFPs, indicating taxonomy imprecision (such as spelling mistakes) and geographic coordinates' incongruence in the data, requiring verification and correction of the original data by the NFPs. A new feature was introduced, making these taxonomic and GIS reports automatically (real-time) available and downloadable to the NFPs on the EURISCO Intranet.

Two e-bulletins (April and December) were made available on the EURISCO Web site (http://eurisco.ecpgr.org/releases/issues.php), as well as disseminated via e-mail to more than 200 individuals.

Some facts and numbers regarding changes and improvements in EURISCO during 2010:

- The total number of accessions has increased by 33 978, reaching a total of 1 083 447 accessions in December 2010;
- One new National Inventory joined (Bosnia and Herzegovina), raising the number of participating countries to 41;
- There was an increase of 16 in data providers, reaching 313 institutes conserving PGR;
- The number of species names (including synonyms and misspellings) represented in EURISCO increased by 671 species, reaching 35 227 species;
- Accessions flagged in EURISCO as part of the Multilateral System have reached the number of 210 797 from 13 countries, representing around 20% of the total number of accessions recorded in EURISCO;
- During 2010 the EURISCO portal received 8650 visits from 4095 unique visitors.

Outlook for 2011: activities planned by the Network include the organization of a Second Capacity Building Inter-regional Workshop on International Treaty Implementation, jointly with the Inter-regional Cooperation Network. This will be held in Izmir, Turkey, on 28-29 September, jointly with the Near East and North Africa (NENA) Plant Genetic Resources Network.

An improved version of the EURISCO Web site will be launched, including a solution to the issues regarding errors in taxonomic names and synonymy. The first steps will be taken towards inclusion of C&E data.

3.8. 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 First Meeting of the two Working Groups on "Wild Species Conservation in Genetic Reserves" and "On-farm Conservation and Management" was held in Funchal, Madeira, Portugal, on 16 September 2010, jointly with the final meeting of the project "An Integrated European *In Situ* Management Work Plan: Implementing Genetic Reserves and On Farm Concepts" (AEGRO).

The WGs were involved in the activities of the AEGRO project, which has developed methodologies for *in situ* management of both crop wild relatives (CWRs) and landraces (LRs). The former methodology is complemented by the CWR *In Situ* Strategy Helpdesk which is available online at http://aegro.jki.bund.de/aegro/. It assists national PGR programmes with the systematic identification of candidate genetic reserve sites. The next step towards progress in data management consisted in the integration of the Population Level Information System (PLIS) into the Crop Wild Relative Information System (CWRIS) and in building a European inventory of landraces. The PGR Secure project "Novel characterization of crop wild relative and landrace resources as a basis for improved crop breeding", funded under the EU Seventh Framework Programme (FP7) will further address these needs. This project will include, *inter alia*, the establishment of Europe-wide national CWR and landrace checklists and European inventories, as well as national and generic strategies for European CWR and landrace conservation actions, as well as developing improved methodologies for conserved CWR and landrace diversity within breeding programmes.

The On-farm Conservation and Management WG reviewed the national experiences on threats to landraces, inventories and promoting use. Creating a clearing-house mechanism for landraces (i.e. a European inventory) will be facilitated by the availability of the draft standards prepared by the WG (see http://www.ecpgr.cgiar.org/Networks/Insitu_onfarm/Docs/OnfarmDescr_DRAFT271107.pdf) which represent a solid base for developing agreed standards and of a specific Web site (see https://www.sharinginformation.eu/) which can be used in reaching European stakeholders and institutions aware of landraces maintained on-farm.

The On-farm Conservation and Management WG and the Wild Species Conservation in Genetic Reserves WG surveyed the status of progress of National CWR and LR conservation in each of the participants' countries by reviewing national progress towards the establishment of specific indicators of maintenance. The results presented indicate for the majority of European countries that very few had made significant progress, except that the majority of countries had some *ex situ* samples of CWR germplasm in the genebanks. The WGs used a "Horizon Scanning" exercise to identify likely priorities for the future. Notable among the results of the short-term CWR priority setting were the requirements for systematic genetic reserve implementation to conserve *in situ* CWR diversity at both individual national and European scales, wherever possible the integration of *in situ* CWR conservation into on-farm initiatives, the undertaking of national genetic gap analysis of CWR species as a basis for the establishment of national CWR conservation action plans, the incorporation of legislative protection for CWR species and genetic diversity at both national and European levels and promotion of closer conservationist/breeder links and through that link, to enhance CWR diversity utilization. For short-term LR priority the production of national LR inventories and the generation and implementation of a National LR Conservation Strategy is of the highest priority. While in terms

of the priorities between 2020 and 2035 identified by horizon scanning, the likely highest priority CWR issues are implementing a European network of CWR genetic reserves (most likely in association with the existing Natura 2000 network of protected areas), systematic IUCN Red Listing of European CWR species and complementing the current criteria to take into account threat assessment of intra-specific genetic diversity, promotion of more-participatory management and monitoring models for CWR conservation, and improving national CWR inventories and prioritization of inventory on economic value to better address breeders' demands. The longer-term priority issues for LR were identified as improved European and national legislation to promote LR on-farm conservation, research into the value of unique crop diversity held within European home gardens, the establishment of a European on-farm inventory of LR, former breeders' varieties and farm saved seeds, the development of participatory management and monitoring models for LR conservation and the promotion of biodiversity-friendly agriculture systems.

The Madeira proceedings will be published in 2011 (Maxted et al. 2011, see section on Publications).

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) was successful and is due to start in 2011.

Outlook for 2011: The **PGR Secure** project will organize a joint workshop with ECPGR on crop wild relatives and landraces in Palanga, Lithuania, 7-9 September 2011. The workshop will involve the members of the Wild Species Conservation in Genetic Reserves and On-farm Conservation and Management Working Groups, as well as National Inventory Focal Points, offering training and guidance.

The focus of the National Inventory Focal Points will be:

- 1. To provide training and guidance on the creation and updating of the national CWR and LR inventories.
- 2. To make progress on the mechanisms to upload CWR and LR data onto EURISCO.

As large part of the funds allocated to this Network were spent for the meeting in Madeira, and also considering that PGR Secure will be a framework to make progress with the Networks workplan, the Second Meeting of the WG on On-farm Conservation and Management, that was planned for September 2012, was cancelled by decision of the SC at its 12th Meeting in Bratislava.

3.9. Inter-regional Cooperation Network

The Inter-regional Cooperation Network Coordinating Group consisted of five members: Frank Begemann, Germany (Network Coordinator); Merja Veteläinen, Finland; Petra Engel, Italy; Silvia Strãjeru, Romania; and Ayfer Tan, Turkey.

In November 2010, the Treaty Secretary, Shakeel Bhatti, sent a letter to the Network Chair, acknowledging his intention to further promote a partnership with ECPGR. Subject to the availability of resources, the Treaty Secretary was looking forward to organizing together a workshop in the Near East with the Near East and North Africa (NENA) Plant Genetic Resources Network and in any other region in which further capacity building is required.

The **Network Coordinating Group met in Bratislava, Slovakia**, on 14 December 2010 and discussed opportunities for a continued collaboration with the International Treaty. The following conclusions were reached:

• ECPGR (through the Inter-regional Cooperation Network) can offer to continue its support for an inter-regional collaboration to share experience in the implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) and in particular its Multilateral System.

- ECPGR could contribute to about two more bi-regional meetings, funds permitting, under the following conditions:
 - ECPGR to be involved in developing the agenda jointly with the other organizers;
 - ECPGR to be recognized by the ITPGRFA in the following documentation to the Governing Body;
 - An Agreement between ECPGR and the ITPGRFA-Secretariat is signed to document this collaboration.
- ECPGR would be interested in organizing a workshop in the Near East region, jointly with the Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA)

Outlook for 2011: activities planned by the Network include the organization of a second "Capacity building inter-regional workshop on International Treaty implementation", to be held in Izmir, Turkey, 27-29 September 2011, jointly with the International Treaty Secretariat and the NENA Network.

4. AEGIS INITIATIVE FOR "A EUROPEAN GENEBANK INTEGRATED SYSTEM"

The AEGIS development process continued during 2010 with a series of activities and the major milestones reached in the development of AEGIS during 2010 are summarized below:

- By the end of December 2010 the following 26 countries had returned the signed MoU to Bioversity International: Albania, Azerbaijan, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Georgia, Germany, Iceland, Ireland, Lithuania, Montenegro, The Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Switzerland, Ukraine and the United Kingdom. In addition, in ten countries, nineteen AEGIS Associate Membership Agreements between institutions holding *ex situ* accessions and the respective National Coordinators were concluded.
- Three proposals out of 17 submitted under the first call for proposals for the Competitive Grant Scheme were granted. The following one-year projects started in early 2010:
 - Assessment of Unique Material in the European Collections of Umbellifer Crops, coordinated by the University of Warwick, United Kingdom;
 - Towards comprehensive pea germplasm management for future use, coordinated by Agritec Plant Research, Czech Republic;
 - Cryopreservation of young inflorescence bases in bolting garlic for germplasm storage, coordinated by the Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Germany.
- A second call was launched inviting ECPGR Networks, Network Coordinating Groups and Working Groups to submit proposals by the deadline of 31 December 2010. A total of 11 proposals were received for the second call.
- A project proposal (EUROGENEBANK in short), coordinated by the ECPGR Secretariat, which had been submitted in 2009 to a Call under the Seventh Framework Programme of the EU (Research Infrastructures – Support to existing research infrastructures – Integrating Activities), successfully passed the thresholds of eligibility, but was not funded due to a shortage of funds.
- The Secretariat developed a template for an operational genebank manual. This document was tested by NordGen, Sweden and IPK, Germany and it was presented in various WG meetings. It was finally approved by the AEGIS Advisory Committee and the final version is available on the AEGIS Web site (September 2010).
- The Secretariat has been actively involved in the process of revision of the FAO *Genebank Standards*, with the intention to ensure the participation of the ECPGR community in the revision process. The first draft of the revised standards has been circulated to the ECPGR Networks for comments in January 2011. The revised FAO Genebank Standards document could eventually be adopted for AEGIS.

- A "simplified" procedure for the selection of European Accessions has been prepared by the Secretariat (24 November 2010) and it has been proposed for adoption by the Working Groups.
- The Secretariat attended several WG and other meetings, presenting the concept and status of development of AEGIS. Presentations given are available on the AEGIS Web site.

Outlook for 2011: activities foreseen for 2011 include the conclusion of the first set of projects funded by the Grant Scheme and the assignment of new grants following the second call. All the Working Groups will be invited to compile draft lists of European Accessions and to make progress in the definition of crop-specific standards.

Considering that an FP7 call for a project on Plant Genetic Resources Centres (Research Infrastructures), is expected to be launched by the EC in July 2011, activities will be dedicated to set up and submit a new proposal.

5. LINKS WITH OTHER NETWORKS AND INITIATIVES

The following interactions between ECPGR and other Networks and initiatives took place during 2010:

➤ Global Crop Diversity Trust

The two-year project funded by the Global Crop Diversity Trust for the regeneration and safetyduplication of regionally prioritized crop collections was nearly concluded at the end of 2010. A couple of countries will complete their activities in 2011 with a no-cost extension of the project. Also the safety-duplication of most of the accessions still needs to be completed. The project, jointly prepared by the ECPGR Cereals Network and the Oil and Protein Crops Network, is aiming at carrying out regeneration and safety-duplication of over 5000 threatened accessions identified in ten European countries (Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Greece, Hungary, Israel and Portugal). The total grant is nearly US\$ 130 000 and the ECPGR Secretariat is acting as the backstopping agency for the project. At the end of the second year of activities, the 11 partner institutions involved have successfully regenerated 70% of the expected accessions, i.e. 985 grain legume (chickpea, common bean, cow pea, faba bean, grass pea and lentil) and 2675 cereal accessions (Aegilops, barley, maize, sorghum and wheat). A significant number of accessions (1116, i.e. 21% of the target to be regenerated) were found to be non viable (153 legume and 963 cereal accessions), indicating that the project was timely. All the regenerated samples are being safety-duplicated both at the Svalbard Seed Vault and at a CGIAR centre or at another genebank meeting international management standards. All germplasm regenerated under the project will be made available and otherwise dealt with in accordance with the terms and conditions of the Standard Material Transfer Agreement of the International Treaty on Plant Genetic Resources for Food and Agriculture. Suitable regeneration protocols were recommended and the data obtained (passport and characterization) will be made publicly available through EURISCO and the Central Crop Databases.

> European Commission

A few AGRI GENRES projects involving the ECPGR Networks were concluded in 2010 and held their final meetings: the AEGRO (*in situ* management) project (http://aegro.jki.bund.de/aegro/) was concluded in Madeira, Portugal, in September 2010, jointly with the ECPGR Working Groups of the *In situ* and On-farm conservation Network; the AVEQ (*Avena* for quality in human consumption) project (http://eadb.bafz.de/aveq/index.php?id=23) had its final meeting in Bucharest, Romania, in October 2010, jointly with the *Avena* WG meeting; LEAFY VEG (use of leafy vegetables germplasm) (http://documents.plant.wur.nl/cgn/pgr/leafyveg/) and GrapeGen06 (management of *Vitis* genetic resources) were also concluded in 2010. EURALLIVEG (vegetative *Allium* core collection) (http://euralliveg.ipk-gatersleben.de/home.php) will terminate in March 2011.

At the 12th Steering Committee Meeting in Bratislava, Slovakia, December 2010, each National Coordinator of the EU countries was invited to pursue at national level lobbying activities that could promote a stronger interaction between ECPGR and the EC/EU (such as in the framework of the "Standing Committee on Seeds" and the "Management Committee on the conservation, classification, collection and exploitation of genetic resources in agriculture"). It was also agreed to revitalize the existing Task Force on EU matters, in order to coordinate ECPGR actions towards the EU. The Task Force is composed of Jan Engels, Paul Freudenthaler, Siegfried Harrer, Lars Landbo and Fernando Latorre.

> The International Treaty on PGRFA

Progress in the collaboration with the Secretariat of the International Treaty for capacity building on the implementation of the Treaty in other regions is briefly described above in Chapter 3.9.

Following approval by the Steering Committee in September 2008 of a mechanism of registration of accessions in the Multilateral system (MLS) and the introduction of a descriptor field in EURISCO regarding MLS status of each accession, nearly 211 000 accessions had been registered as part of the MLS by 13 countries at the end of November 2010.

6. ECPGR EXTERNAL REVIEW

The ECPGR Independent External Review was completed in July 2010 at Bioversity International headquarters in Maccarese, Rome. The Review Panel comprised three members: Thomas Gass (Chair), Marianne Lefort and Orlando de Ponti. The Panel analysed numerous documents including a Stakeholders Survey which was conducted in March 2010 and a synthesis document prepared by the ECPGR Secretariat. Face-to-face meetings and teleconferences were held in Rome with the ECPGR Secretariat Team and its coordinator Lorenzo Maggioni, various Bioversity staff, the AGP office at FAO, the Global Crop Diversity Trust and the Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture. Furthermore, a number of telephone interviews were conducted with members of ECPGR Working Groups and with National Coordinators. Two members of the ECPGR Steering Committee (Jens Weibull and Silvia Sträjeru) also attended the ECPGR presentations and the visits to partners at FAO. Prior to the actual review which took place in Maccarese, Orlando de Ponti attended the *Brassica* Working Group meeting in March 2010 in Linguaglossa, Italy.

The Review was completed with the finalization of the External Panel Report and its circulation to the Steering Committee.

The Review Panel's report included 25 recommendations, envisaging a new role for the Programme, including evolution towards a stronger institutionalization, enforced executive and decision-making power of the Steering Committee and a strengthened Secretariat. Revision of the Programme's overall objectives, resource mobilization and hosting arrangements were also considered in the Panel's recommendations.

The proposal to anticipate the Steering Committee meeting for an extraordinary session dedicated to discuss the review recommendations was accepted by the SC and the 12th Meeting was organized in December 2010 in Bratislava, Slovakia (see next section).

The Panel's report and other background documents are available from the Web site at http://www.ecpgr.cgiar.org/steering committee/ier.html.

7. 12TH (EXTRAORDINARY) STEERING COMMITTEE MEETING

As a result of the ECPGR Independent External Review, the 12th Steering Committee Meeting was organized as an extraordinary meeting in Bratislava, Slovakia, in December 2010. At this meeting the Panel's Chair, Thomas Gass, presented the outcomes of the Review and recommendations to the SC. Four parallel sessions addressed all key recommendations related to ECPGR's objectives, issues related to the institutionalization, hosting arrangements and resource mobilization aspects.

The main decisions made by the Steering Committee included:

- 1. A consensus agreement on the wording of ECPGR's new goal and outcomes (see Box 1);
- 2. Establishment of an Executive Committee, the members of which were elected during the meeting. They represent five sub-regions of Europe and are Gert Kleijer (Chair), Merja

- Veteläinen, Silvia Strājeru, Alvina Avagyan and Fernando Latorre. Interim terms of reference will be developed by the Committee itself;
- 3. Assignment to the Executive Committee of the task of developing an "options paper" that will address a number of topics (see Box 2). This paper will be discussed at the next SC meeting during the second half of 2012, in order to allow sufficient time to prepare for the new Phase of ECPGR that should start in 2014;
- 4. Resurrection of the Task Force to develop a plan to deal with the European Commission and produce a brief strategy paper on the relationship of ECPGR with the European Union/Commission and Parliament;
- 5. Confirmation by the Steering Committee of its role of overseer of EURISCO and request made to the Coordinator of the Documentation and Information Network to contact Bioversity International as the host of EURISCO to seek clarification regarding its development and supervision by ECPGR.

Box 1 New goal and outcomes of ECPGR

A long-term goal to which ECPGR contributes and six outcomes that should be attributable to ECPGR within one Phase were agreed by the Steering Committee as follows:

Long-term Goal

National, Sub-regional and Regional Programmes in Europe rationally and effectively conserve *ex situ* and *in situ* PGRFA and increase their utilization.

Outcomes

- 1. AEGIS is operational and accessions in AEGIS are characterized and evaluated.
- 2. The functionality of EURISCO meets users' expectations and quantity and quality of data in EURISCO is increased, including *in situ* and on-farm data.
- 3. In situ and on-farm conservation and management concepts are agreed.
- 4. Commitment and regular resources of national governments is sustained or increased and commitments and resources of the European Commission, as well as of other potential donors towards ECPGR are increased.
- 5. Relationships with users of germplasm are strengthened.
- 6. Organizational structure and secretarial support are adequate to effectively sustain the operations of ECPGR.

Box 2 Topics to be addressed by the "Options paper"

The Executive Committee was asked to prepare an "Options paper", to be tabled at the 13th SC meeting in 2012, addressing the following items:

- Elaboration of the ECPGR objectives, based on the long-term goal and outcomes agreed in this meeting:
- Legal status of ECPGR (including pros and cons);
- Establishing the position of Executive Director/Executive Secretary and defining the Terms of Reference (including pros and cons);
- Rules of Procedure (elaborating a first draft);
- Internal ECPGR operational structure (including pros and cons);
- Hosting arrangements (including pros and cons);
- Any cost implications of the various options.

8. Publications

8.1. Publications produced in 2010

The following publications were produced in 2010 and are available in electronic format through the ECPGR Web site (http://www.ecpgr.cgiar.org/publications.html):

ECPGR electronic documents

- Report of the Documentation and Information Network Coordinating Group. Fourth Meeting, 17-18 February 2010, Maccarese, Rome, Italy.
- Report of a Vegetables Network. Third Meeting, 10-12 November 2009, Catania, Italy.
- Report of a Network Coordinating Group on Sugar, Starch and fibre Crops. Third meeting, 8-9 October 2009, Quedlinburg, Germany.
- Report of a Working Group on Grain Legumes. Fourth Meeting, 16-17 November 2007, Lisbon, Portugal.
- Report of a Working Group on Forages. Ninth Meeting, 23-25 October 2007, Piešt'any, Slovakia.
- Report of a Working Group on *Malus/Pyrus*. Third Meeting, 25-27 October 2006, Tbilisi, Georgia.
- Report of a Working Group on Fibre Crops (Flax and Hemp). First Meeting, 14-16 June 2006, Wageningen, The Netherlands.
- Report of a Working Group on *Brassica*. Fourth Meeting, 2-4 March 2010, Linguaglossa, Catania, Italy.
- Progress report for the 12th Meeting of the Steering Committee, 14-16 December 2010, Bratislava, Slovakia.
- Independent External Review of the European Cooperative Programme for Plant Genetic Resources (ECPGR). Stakeholders' Consultation Report, March 2010.
- ECPGR: Secretariat's overview of its current status, issues and future perspectives. A synthesis document prepared for the Independent External Review.
- ECPGR Annual report 2009.
- ECPGR Financial report 2009.

Bioversity publications

- Issues 40 and 41 of Bioversity's **Regional Newsletter for Europe** were also published in 2010 with contributions and partial financial support from ECPGR. From Issue 41 onwards the Newsletter will only be published electronically.

Other publication

- Hintum TJL van, Knüpffer H. 2010. Current taxonomic composition of European genebank material documented in EURISCO. Plant Genetic Resources: Characterisation and Utilisation 8:182-188.

8.2. Publications in preparation in 2010

• ECPGR electronic documents

- Report of a Working Group on Cucurbits. Second Meeting, 8-10 November 2010, Tbilisi, Georgia. (first draft online January 2011)
- Report of the Twelfth Meeting of the Steering Committee, 14-16 December 2010, Bratislava, Slovakia. (published February 2011)
- Report of a Working Group on Fibre Crops (Flax and Hemp). Second Meeting, 7-9 July 2010, Šumperk – Velké Losiny, Czech Republic (published March 2011).
- Report of a Working Group on *Prunus*. Eighth Meeting, 7-9 September 2010, Forlì, Italy (published March 2011).
- Report of a Cereals Network. Second Meeting, 21-24 April 2008, Foça, Turkey. (published April 2011)
- Report of a Working Group on Cucurbits. Ad hoc Meeting, 23-24 October 2008, Warsaw, Poland. (published May 2011).

• Other publications

- Maxted N, Dulloo ME, Ford-Lloyd BV, Frese L, Iriondo JM, Pinheiro de Carvalho MAA, editors.
 2011. Agrobiodiversity Conservation: Securing the Diversity of Crop Wild Relatives and Landraces. CAB International, Wallingford.
- Daunay MC, Allender C, Astley D, Bas N, van Dooijeweert W, van Treuren R, Branca F, Díez MJ, Geoffriau E, Keller ERJ, Kotlińska T, Smékalová K, Engels J, Maggioni L. 2011. More efficient conservation and use of vegetable genetic resources in Europe: ECPGR achievements and perspectives. Acta Horticulturae (accepted).

9. ECPGR MEETINGS HELD IN 2010

- Fourth Meeting of the Documentation and Information Network Coordinating Group, 17-18 February 2010, Maccarese, Rome, Italy.
- Fourth Meeting of the Working Group on *Brassica*, 2-4 March 2010, Linguaglossa, Catania, Italy.
- Tenth Meeting of the Working Group on Forages, 27-29 April 2010, Poel, Germany.
- Second Meeting of the Working Group on Fibre Crops (Flax and Hemp), 7-9 July 2010, Šumperk - Velké Losiny, Czech Republic.
- Eighth Meeting of the Working Group on *Prunus*, 7-9 September 2010, Forlì, Italy.
- First Meeting of the Wild Species Conservation in Genetic Reserves Working Group and On-farm Conservation and Management Working Group, 16 September 2010, Funchal, Madeira, Portugal.
- Sixth Meeting of the Working Group on Avena, 20-21 October 2010, Bucharest, Romania.
- Second Meeting of the Working Group on Cucurbits, 8-10 November 2010, Tbilisi, Georgia.
- Twelfth Meeting of the Steering Committee, 14-16 December 2010, Bratislava, Slovakia.

10. COORDINATING SECRETARIAT AND BIOVERSITY INTERNATIONAL

During 2010, the following staff have worked for the Coordinating Secretariat: Jan Engels (as half-time AEGIS Coordinator); Lidwina Koop (as ECPGR Programme Assistant, assisting in all administrative and financial matters); Elinor Lipman (as half-time Scientific Assistant, based in Montpellier, France, involved in the compilation and layout of ECPGR publications and general support to the Secretariat activities); and Lorenzo Maggioni (ECPGR Coordinator).

The scientific and technical contributions, as well as management and administrative support provided by Bioversity International and its staff to the work of ECPGR are duly acknowledged. In particular, Jozef Turok served as Director of the Regional Office for Europe until 31 August 2010 and was then replaced on an interim basis by Jan Engels. Bioversity also provided funding for the half-time EURISCO Coordinator (Sónia Dias). Patti Sands offered her services and expertise in support of the organization of the Independent External Review. Cristina Sette was very helpful for the preparation of the stakeholders' consultation survey and report.



Lorenzo Maggioni ECPGR Coordinator

(with inputs from Sonia Dias, Jan Engels, Elinor Lipman, and from the ECPGR Network Coordinating Groups)

Rome, 30 June 2011

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