



European Cooperative Programme for Plant Genetic Resources (ECPGR)

Technical Report of ECPGR Phase VIII (January 2009 – November 2012)

**(Prepared for the 13th Steering Committee meeting,
4-7 December 2012 Vienna, Austria)**

CONTENTS

1. Introduction.....	1
2. Membership	1
3. Structure and mode of operation.....	2
3.1. Activities of the Executive Committee (ExCo)	2
3.2. Country quota	2
3.3. EURISCO Advisory Body function of the Documentation and Information Network	3
3.4. AEGIS Advisory Committee	3
4. Network operations	3
4.1. Achievements of Working Groups during Phase VIII	3
4.1.1. Task sharing and capacity building	4
4.1.2. Characterization and evaluation	5
4.1.3. <i>In situ</i> and On-farm conservation and management	6
4.1.4. Documentation and Information	7
4.2. AEGIS	8
4.2.1. Memorandum of Understanding and Associate Member agreements	8
4.2.2. European Collection	8
4.2.3. AEGIS Quality System (AQUAS)	9
4.2.4. Safety-duplication Policy	9
4.2.5. Competitive Grant Scheme	9
4.2.6. Project proposals	9
4.2.7. Web site	9
4.2.8. Concluding remarks and outlook	10
4.3. EURISCO	11
4.3.1. Summary of facts and figures	11
4.3.2. Improvements	11
4.4. EURISCO and the European Central Crop Databases (ECCDBs)	12
4.5. Cross-cutting activities.....	13
4.6. Inter-regional Cooperation	13
4.7. ECPGR Web site	13
4.8. Publications	14
4.8.1. Reports and scientific articles	14
4.8.2. Bioersity Newsletter for Europe	14
5. Links with other initiatives and developments in international fora.....	14
5.1. European Commission	15
5.2. The International Treaty on PGRFA.....	15
5.3. Global Crop Diversity Trust (The Trust).....	16
5.4. FAO	16
5.5. EUCARPIA and the European Seed Association (ESA)	16
5.6. SEEDNet	17
6. Financial status	17
6.1. Contributions received for Phase VIII (Table 1)	17
6.2. Budget and expenditures in Phase VIII (Table 2)	17
6.3. Financial status of Phase VII (Tables 3 and 4)	17
6.4. Conclusion (Tables 5 and 6).....	18
7. Coordinating Secretariat.....	18
Annex I. Major achievements of AEGIS during the period 2009-2012	19
Annex II. ECPGR Financial status – Phase VIII (status at 31 October 2012)	31
Annex III. List of publications and working documents produced in Phase VIII	38

1. Introduction

The present document is prepared as a background for the 13th meeting of the ECPGR Steering Committee (SC) (4-7 December 2012, Vienna, Austria) to report on the progress so far in the implementation of the agreed workplan for Phase VIII (2009-2013).

Other background documents referred to in this report are available online (http://www.ecpgr.cgiar.org/steering_committee/13th_sc_meeting/background_documents.html).

Full references of publications quoted in this report are available in Annex III.

The agreed budget for Phase VIII, as defined by the 11th SC meeting (September 2008, Sarajevo), was based on the SC approval of the collective ECPGR Network proposals. These had been submitted by all Networks, according to the rule of using funds with the ratio 75/25 (Meetings vs. Actions), where 25% was the upper limit for actions. Network proposals were in line with the four priorities identified in 2006 by the SC for Phase VIII, i.e. 1) Task sharing (AEGIS) and capacity building, 2) Characterization and evaluation; 3) *In situ* and On-farm conservation and management, and 4) Documentation and Information.

Apart from the Networks' proposals, additional funds were included in a budget line dedicated to AEGIS activities, to be assigned through a Competitive Grant Scheme. This was an indication that AEGIS activities were the priority.

The rationale of the ECPGR philosophy was reiterated for Phase VIII, considering it a facilitating mechanism where meetings were very important, although they were requested to become more active and operational.

Apart from the implementation of Networks' activities agreed for Phase VIII, this Phase has been characterized by the preparation and implementation of an Independent External Review (IER) (see report of the 12th SC meeting, 14-16 December 2010, Bratislava, Slovakia and ECPGR 2010 Progress Report) and by the subsequent activities aiming to prepare options for Phase IX of ECPGR.

Consequently, the SC met in an extraordinary meeting in December 2010, dedicated to the IER, and is meeting again in an anticipated end-of-Phase session in 2012, mainly to discuss well in advance how to complete the transition towards a new mode of operation and other possible changes of ECPGR in Phase IX. Since a third SC meeting during Phase VIII is not budgeted, this meeting is combining the objective to reach an agreed conclusion of the tendering process requested by the SC for the hosting of the ECPGR Secretariat and of EURISCO, with the regular responsibilities of an end-of-Phase meeting.

Even though the SC had therefore little time to dedicate in its plenary meetings to the monitoring of Networks' activities, these were reported in the technical reports for the years 2009-2011 (available from the ECPGR Web site, http://www.ecpgr.cgiar.org/steering_committee.html) and are also broadly summarized here, highlighting the main achievements. Special attention will be given to the achievements of the Working Groups (WGs) in the implementation of the four priorities for Phase VIII, including the operation of AEGIS and EURISCO.

2. Membership

At the end of 2008, 40 countries had participated in Phase VII of ECPGR by signing the Letter of Agreement and/or contributing annually to the Programme.

During Phase VIII, 39 countries signed the Letter of Agreement and two countries (France and Israel) contributed to the Programme without signing. The list of 43 countries participating in Phase VIII is given in Box 1. Compared to Phase VII, three new countries have joined, Belarus (2010), Montenegro (2009) and the Russian Federation (2009), while two member countries (Armenia and Malta) have not signed the Letter or paid contributions during Phase VIII.

Three other potential member countries currently remain outside the membership of ECPGR: Liechtenstein, Luxembourg and Moldova. Focal points for Liechtenstein and Moldova have been invited to the 13th Steering Committee meeting to familiarize with the ECPGR system and to give indications on the possible road map to become full members, while Luxembourg did not express sufficient interest to join.

Box 1. Member countries of ECPGR as of November 2012

Albania*	Denmark*	Italy	Russian Federation
Armenia	Estonia*	Latvia*	Serbia
Austria	Finland*	Lithuania*	Slovakia*
Azerbaijan*	France	Macedonia (FYR)	Slovenia*
Belarus*	Georgia*	Malta	Spain
Belgium*	Germany*	Montenegro*	Sweden*
Bosnia and Herzegovina*	Greece	The Netherlands*	Switzerland*
Bulgaria*	Hungary*	Norway*	Turkey*
Croatia*	Iceland*	Poland*	Ukraine*
Cyprus*	Ireland*	Portugal*	United Kingdom*
Czech Republic*	Israel	Romania*	

*AEGIS members

3. Structure and mode of operation

Following the decisions of the 11th meeting of the SC in Sarajevo (2008), Phase VIII of ECPGR was started with the same mode of operation as that of the previous Phase, with only small adjustments, i.e.: 1) two new Working Groups were established (“Wild species conservation in genetic reserves” and “On-farm conservation and management”); 2) the Documentation and Information Network Coordinating Group took the responsibility of acting as the EURISCO Advisory Body; 3) new terms of reference were defined for the Inter-regional Cooperation Task Force, aiming at cooperation for the implementation of the International Treaty; 4) the list of Observers in the Steering Committee was revised; 5) a new Publication Strategy was accepted, reducing the commitment of the Secretariat to the publication of only the essential minutes of the meetings.

As a consequence of the above decisions, the Terms of Reference (ToRs) of the ECPGR operational bodies were updated in October 2008

(http://www.ecpgr.cgiar.org/fileadmin/www.ecpgr.cgiar.org/MISC/ToRs_PhaseVIII_3_final.pdf)

3.1. Activities of the Executive Committee (ExCo)

The ExCo started its operation in 2011, chaired for the first two years by Gert Kleijer (Switzerland) and further consisting of Merja Veteläinen (Finland), replaced by Jens Weibull (Sweden) in 2012, Silvia Străjeru (Romania), replaced by Zofia Bulińska-Radomska (Poland) in 2012, Alvina Avagyan (Armenia), Fernando Latorre (Spain) and Lorenzo Maggioni (ex officio).

The ExCo held three meetings and was very effective in supporting and advising the Secretariat (mainly through bilateral communication with the Chair) in a number of strategic matters. Specifically, the ExCo offered leadership and directly contributed to the preparation of the “Options Paper” requested by the SC in 2010, and to the preparation of the 13th SC meeting in Vienna, including the finalization and evaluation of the tender for the hosting of the ECPGR Secretariat and of EURISCO.

3.2. Country quota

Participation in Working Group meetings during Phase VIII was based, similarly to the previous Phase, on quota of funded participants assigned to each country (“country quota”). The total budgeted number of quota was 386, of which 318 have been used until today (298 country quota + 20 Chair’s quota at the discretion of the Chair). Countries have generally made good use of the assigned quota, with the exception of Malta, that has not participated in the Programme, and of France, that has suffered from the absence of a designated National Coordinator.

The possibility to check online the status of the use of country quota was made available from the ECPGR Web site as of April 2011 and proved a useful tool.

The 318 quota were used to fund participation of 22 WGs in 17 meetings, an average of 14 quota per WG, resulting in an average cost per quota of €1046, to be compared with €1016 that was recorded for Phase VII and with the estimate average cost of €1200 that was used to prepare the budget.

Three WG meetings are still planned for 2013 and 68 budgeted quota are still available for use.

3.3. EURISCO Advisory Body function of the Documentation and Information Network

At the 11th SC meeting (Sarajevo, 2008), the Documentation and Information Network Coordinating Group (NCG) was given the responsibility of acting as specific Advisory Body with the function of monitoring progress in the development and maintenance of EURISCO. This task was implemented through the recommendations made at the NCG's Fourth meeting in February 2010 and with mainly bilateral interactions between the NCG Coordinator (Th. van Hintum, The Netherlands, as of February 2010) and Bioversity staff. The clarification sought from Bioversity on the progress made for the development of EURISCO was obtained by Th. Van Hintum upon his visit to Rome in April 2011. As reported in the ECPGR 2011 Progress Report, the development of EURISCO had been linked to the development of GENESYS, the internationally funded global portal to PGR accession-level information, which draws its data from EURISCO and other international sources. Unforeseen delays in the start of Phase II of the GENESYS development in 2012, with uncertainties on the funding orientation by the donors, have also affected the EURISCO development.

3.4. AEGIS Advisory Committee

The Steering Committee decided through an electronic discussion process to establish an Advisory Committee for AEGIS on 21.02.2007. Its major responsibilities are defined as follows:

"The Committee has primarily a strategic oversight function, whereby it will give guidance to the AEGIS Coordinator on how AEGIS should evolve and be implemented. This function also includes the provision of advice on seeking support at the governmental and international levels to facilitate the implementation of AEGIS. This will include suggestions for collaboration with relevant sub-regional or global initiatives (EU, ITPGR, Global Crop Diversity Trust, SEEDNet, etc.). The Committee will also give advice on how financial resources that are needed for the implementation of AEGIS could be mobilized."

Since its establishment the Committee held one meeting and communicated also by telephone or electronically; the membership changed and the number of members decreased significantly. Simultaneously, AEGIS evolved and has now entered its operational phase, with the establishment of the European Collection last year (2011). The *modus operandi* changed over time from irregular face-to-face meetings to the provision of advice to the Secretariat through email correspondence. Over the years it has been noted that the active participation of Committee members in the discussions has decreased and that the issues raised for discussion and approval seemed to become too technical.

Considering these developments, it is proposed that the SC revise the ToRs and the membership of the Advisory Committee.

4. Network operations

4.1. Achievements of Working Groups during Phase VIII

Four priority areas were identified for Phase VIII by the SC already in its Tenth meeting in Riga, Latvia (2006). Crop and Thematic Networks were requested to dedicate their efforts to these:

1. Task sharing and capacity building, as the top priority
2. Characterization and evaluation
3. *In situ* and on-farm conservation and management
4. Documentation and information.

The Networks activities have been guided by the respective projects and workplans that were approved by the SC during its 11th meeting in Sarajevo (2008). These are also available from the respective Networks' pages on the ECPGR Web site.

The following sections include a selection of the main achievements of the WGs during Phase VIII in the above-mentioned priority areas. In a few cases these achievements are the direct results of the use of ECPGR project funds, in other cases of input-in-kind contributions of the WG members, following the agreed workplans. In still other cases, such as for example the EU projects, the ECPGR WGs have been the vehicle facilitating the submission and implementation of such projects, the content of which is often largely inspired by the WG's objectives.

4.1.1. Task sharing and capacity building

(for AEGIS-related activities see below, Section 4.2)

Genetic stocks

Barley and Wheat WGs developed overviews of existing genetic stock collections. The barley overview was presented by U. Lundqvist et al. at the EUCARPIA Genetic Resources Conference (5-7 April 2011, Wageningen, The Netherlands). A review article was prepared on existing genetic stock collections for barley and wheat (Knüpffer 2009). An inventory of precise genetic stock collections in Europe and their conservation status was also prepared by the Wheat WG in 2012. Based on these experiences the Work Package on genetic stocks was developed as part of the FP7 Plant Gene Access Project.

Safety-duplication

The Institute for Plant Genetic Resources "K. Malkov" (IPGR), Sadovo, Bulgaria has concluded in December 2010 a **safety-duplication arrangement of 1064 cucurbit accessions with CGN, The Netherlands**.

Collecting

ECPGR missions were organized to visit Cyprus in May 2009, and Sicily and Andalusia in 2010, aiming to survey populations and collect samples from endangered **wild *Avena* populations**, to be placed under long-term conservation. *Avena ventricosa*, *A. eriantha* and *A. hirtula* were collected in Cyprus, stored in the Agricultural Research Institute's genebank and safety-duplicates were sent to the Agricultural University of Athens. Populations of *A. insularis* in Sicily were found to be under threat, while *A. murphyi* in Andalusia can still thrive in the area with proper management of pasture and land. The local authorities were informed of the importance of existing populations.

EU projects with involvement of ECPGR Working Groups

- **AVEQ** (*Avena* genetic resources for quality in human consumption) (2007-2011) (<http://aveq.jki.bund.de/aveq/>)
A working collection of about 600 accessions was evaluated for relevant traits for the quality of oats for human consumption and for cold tolerance. A high range of variation for protein, fat, total β -glucan, carbohydrates and antioxidants was found. Remarkable was the high content of antioxidants in the diploid bristle or sand oat (*A. strigosa*). Genotypes were identified with consistently low mycotoxin contamination, such as an old landrace found in Schenkenfelden, Austria. Considerably frost-resistant genotypes were found. Regeneration and multiplication protocols for wild *Avena* species were tested. The evaluation data generated are to be integrated in the ECPGR *Avena* Database.
- **EURALLIVEG** (Vegetative *Allium*, Europe's Core Collection, Safe and Sound) (2007-2011) (<http://euralliveg.ipk-gatersleben.de>)
A European core collection of garlic accessions was established, morphologically characterized and prepared for virus-free cryopreservation and safety-duplication, following newly developed protocols for their cryopreservation.
- **LEAFY VEG** (Leafy Vegetables Germplasm, Stimulating Use) (2007-2010) (http://ec.europa.eu/agriculture/genetic-resources/actions/f-001/index_en.htm)

Leafy vegetables were collected across nine Member States and one non-EU country, conserved and characterized; leafy vegetables databases were developed and the level of safety-duplication was increased.

- **GrapeGen06** (Management & Conservation of Grapevine Genetic Resources) (2007-2010) (<http://www1.montpellier.inra.fr/grapegen06/>)

This project included preservation and study of *in situ* populations of *Vitis sylvestris* as well as of old and neglected varieties, especially from Eastern Europe and from Eastern non-European countries. A special interest was given to the characterization of agronomical and technological characteristics of old autochthonous varieties in more conventional conditions (on-farm), to the management of the partners' collections by the identification of synonyms, homonyms and misnamers within and between collections, and to the development of alternative conservation means. The European *Vitis* database was further developed.

4.1.2. Characterization and evaluation

Pre-breeding

- A pre-breeding workshop on **cereals** was held in Alnarp, Sweden, organized in November 2009 by ECPGR, NordGen, the Swedish University for Agricultural Sciences (SLU), Graminor, Norway, MTT Agrifood Research Finland and Oatly AB, Sweden. A concept note was produced: "Pre-breeding for small grain cereals - How to meet future challenges of food supply under a changing climate" (ECPGR Cereals Network and ECPGR Working Group on Barley 2010).
- The **Forages** WG is participating in a NordGen Public Private Partnership (PPP) project on pre-breeding in perennial ryegrass (*Lolium perenne* L.). This project screens diversity of 400 accessions for winter hardiness and will utilize information from the ECPGR *Lolium* database.

Characterization and evaluation

- The development of a molecular characterization project in the framework of a European concerted action is currently being explored by the **Allium** WG in order to develop the methodology for the identification of duplicates. Expressions of interest were already received from Russian Federation and Spain.
- To establish a baseline of genetic diversity data for monitoring **Beta** populations in genetic reserves, about 1000 plants were sampled starting in July 2008 and DNA probes prepared. Section **Beta** was analysed with SSR markers by the JKI. Accessions of *Beta nana* collected by a joint USDA-ARS, GGB and JKI plant exploration team in Greece in 2005 were analysed in a similar way. The results on *Beta nana* and *B. patula* were published (Panella et al. 2010; Frese et al. 2012).
- As part of the **Brassica** WG activities, morphological and molecular (SSR) characterization was carried out by DISPA-University of Catania (UNICT) on 26 wild *Brassica* species (n=9) accessions collected from different European genebanks. Characterization fields were set up in Sicily where the climatic conditions are optimal. Identification and morphological, biochemical and molecular description of 58 unknown *Brassica rapa* accessions provided by European genebanks was carried out by VIR, St. Petersburg. Glucosinolate analysis of freeze-dried samples of the above *Brassica* accessions has been carried out at CSIC, Cordoba, Spain. Wide range of variation was found in total glucosinolate content; the results were presented at the ISHS Conference Brassica 2012 in November 2012 (Branca et al. 2012).
- Methodologies to harmonize fingerprinting protocols were agreed by the **Malus/Pyrus** and **Prunus** WGs and these were published for cherry (Clarke and Tobutt 2009) and for Pyrus (Evans et al. 2009).
- An ECPGR-funded project for "Conservation and characterization of oregano (*Origanum vulgare* L.) wild populations in Europe" was completed by the **WG on Medicinal and Aromatic Plants**. Samples from 51 populations from 19 countries were analysed by the Institute of Applied Botany, University of Veterinary Medicine, Vienna, Austria. Genetic structure analysis has shown genetic radiation originating from a hotspot in the eastern Mediterranean area, with a gradient that could be observed from East to West but not from South to North. High essential oil content was detected especially from samples from Greece, Israel and Turkey and generally a high

selection potential for maximizing essential oil content was shown to be available. Each population was assigned to a specific chemotype, based on its essential oil composition.

- **Wheat WG** members agreed to carry out observations using 6 characterization descriptors and 14 evaluation descriptors and to send the results to the ECPR Wheat Database Manager for inclusion in the database.
- **Umbellifer Crops**
 - Detailed characterization was carried out by Poland (parsley, celery, dill and carrot, NordGen (*Angelica* and *Carum*), France (250 cultivated and 240 wild accessions, evaluation of 45 wild accessions for *Alternaria dauci* resistance, and 34 wild carrot populations from Corsica with SSR markers) and is in progress in UK (creation of a carrot diversity set for pre-breeding.
 - As part of an ECPGR-funded project on *Daucus* wild relatives, taxonomy characterization trials started in 2011 and are ongoing for 80 accessions selected through EURISCO. Further accessions will be selected for evaluation in 2013 to *Alternaria* resistance.

4.1.3. *In situ* and On-farm conservation and management

- Members of the ***In situ* and On-farm conservation Network** were involved in the successful submission of two project proposals and their subsequent implementation:
 - **AEGRO**: “An Integrated European *In Situ* Management Work Plan: Implementing Genetic Reserves and On Farm Concepts”, co-funded by the European Commission, DG AGRI within the framework of Council Regulation 870/2004, coordinated by JKI, Quedlinburg, Germany. The project 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. A Crop Wild Relatives Information System – Population Level Information System (CWRIS-PLIS) (<http://aegro.bafz.de/index.php?id=168>) allows the search for *in situ* occurrences. Priority genetic reserve sites for *Beta* and *Patellifolia* species were identified and proposed for 26 locations. Results of the AEGRO project were published by Maxted et al. (2012).
 - **PGR Secure**: “Novel characterization of crop wild relative and landrace resources as a basis for improved crop breeding”, funded by the EC FP7 scheme for Collaborative Projects (2011-2014, coordinated by the University of Birmingham, UK). This project includes, *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. Descriptors for Web-enabled national *in situ* landrace inventories were published (Negri et al. 2012).
- 30 *In Situ* National Focal Points (NFPs) and 31 On-Farm NFPs were nominated by the National Coordinators.
- The status of progress of European CWR and LR conservation was reviewed, indicating that very few countries had made significant progress, except for the presence of some *ex situ* samples of CWR germplasm in the genebanks.
- The WGs used a “Horizon Scanning” exercise to identify priorities for the future. The results were presented in a paper by Maxted et al. (2012).
- A Web site (www.sharinginformation.eu/) was created by the University of Perugia, Italy, as part of the EC-funded DIVERSEEDS project, to be used in reaching European stakeholders and institutions aware of landraces maintained on-farm.
- Actions were carried out as part of the Crop Networks activities:
 - An overview was completed of the occurrence of wild *Hordeum* species in Europe and the Mediterranean region and a list of crop wild relatives (CWR) of barley in Europe was compiled (Knüpffer et al. 2011).
 - An ecological gap analysis of wild *Hordeum* species on the basis of genebank accession data was carried out by an MSc student, Birmingham (Knüpffer et al. 2011, Vincent et al. 2012).

- Examples of ongoing on-farm *in situ* actions were uploaded on the Forages Web site (presentations given at the 2010 meeting).
- The WG on *Beta* managed to negotiate a “*Beta patula* genetic reserve action plan” with the Natural Park of Madeira, which is going to establish the first genetic reserve for *Beta* in the EU.
- National activities were inspired by the workplan of the Umbellifer Crops WG in Belgium (“Genetic diversity in horticulture in action” programme for promoting the growth of local varieties propagated from seeds produced on-farm, case of celery) and France (description of more than 70 *in situ* wild carrot populations sites, SSR diversity study of wild carrot populations in Corsica to help define an *in situ* management policy, and study of carrot genetic resources for participatory breeding with organic farmers).

4.1.4. Documentation and Information

(for EURISCO-related activities see below, Section 4.3)

- The hosting and management of the **ECPGR Allium Database** was transferred from the University of Warwick, UK to IPK Gatersleben, Germany. This will allow the implementation of new functionalities (online search on botanical names and all passport data).
- The **ECPGR Avena Database** and the **International Database for Beta** (IDDB) received a modern design, with support received from JKI and the EC project AEGRO. The Web sites were linked to the crop-specific modules of the Population Level Information System (CWRIS-AEGRO-PLIS) and Genetic Reserve Information System (GenResIS), which have been developed to support the *in situ* conservation of *Avena*, *Beta* and *Patellifolia*. These improvements can support the development of complementary conservation programmes. Additional C&E data from Armenia were included into the IDDB.
- A new version of the **European Barley Database**, managed by IPK, Germany, was created from the “old” version by transforming the data structure, transferring the database to the Oracle platform and designing a new Web interface. Characterization and evaluation (C&E) data generated during the barley GENRES project (1999-2003), mostly on reaction to biotic and abiotic stresses remain accessible only from the co-existing “old version”. Updating of the EBDB started in February 2011 and is planned to be completed in 2013.
- The **ECPGR Brassica Database**, managed by CGN, The Netherlands, was further updated with records from EURISCO. Accessions belonging to the core collections defined during the AIR (*B. oleracea*) and GENRES (*B. oleracea*, *B. rapa*, *B. napus* and *B. carinata*) projects were flagged. A duplicate search function was developed and used to identify duplicates within *B. rapa* accessions (preliminarily, 30% duplicates were identified).
- The **ECPGR Cucurbits Database**, managed by Universidad Politécnica de Valencia, Spain, was extensively updated, particularly the fields considered as key to locate duplicate accessions and for the selection of the MAAs and detection of duplicates between different collections.
- The **ECPGR Forage Databases** were reorganized. Several of the databases were merged on the basis of the genus and the type of forage crop. The number of databases was reduced from 24 to 11 with new responsibilities assigned across the WG members. Latest updates were made in preparation for the AEGIS Forages Workshop, January 2012 (including analysis of the data received in order to identify most original samples (MOS) and holders of primary collection (PRIMCOLL) in order to identify forage accessions for the European Forage Collection (EFC) – cf. AEGIS).
- The **International Minor Leafy Vegetables database**, managed by IPK, Germany, was improved at the end of 2011. Apart from updating the existing data of rhubarb, asparagus, lamb’s lettuce, artichoke and rocket salad, data were also added of the genera *Atriplex*, *Chenopodium*, *Chrysanthemum*, *Lepidium*, *Portulaca*, *Rumex*, *Taraxacum* and *Tetragonia*.
- A “name checking tool” was developed to be used to find synonyms in the **ECPGR Malus Database**, managed by the University of Reading, UK. A reference database of preferred variety names was created. A list of pomological references is being generated according to an approved

procedure, and will be integrated in the CCDBs. The adopted methodology to validate names of varieties of *Pyrus* was applied to 3000 accessions.

- The functionalities of the **European Cultivated Potato Database**, managed by SASA, UK, were enhanced with the addition of an online tool for data input, allowing collection curators to enter their data directly.
- The **European Prunus Database** was improved by INRA, Bordeaux, with support from the EC project GenBerry and ECPGR funds. A new portal Web site gives access to five new Prunus crop databases (almond, apricot, cherry, peach and plum). An advanced search tool was developed for passport and characterization/evaluation data as well as for molecular data; photo upload and search tools were also developed. The database model was developed in consultation with CRA-W of Gembloux (Belgium) in view of deploying the same structure for the **ECPGR *Pyrus* Database**.
- Updating of the Prunus databases by European partners is in progress (new data provided by Germany, Italy, Latvia, Norway and UK).
- The **ECPGR Tomato Database**, managed by CGN, The Netherlands, improved with the addition of a duplicate finder option, review of taxonomy, descriptors made searchable online and inclusion of C&E data.
- The **ECPGR Eggplant Database**, managed by the Radboud University, Nijmegen, The Netherlands, was revised in its structure and software, resulting in improved end-user interface (easily searchable passport data, minimum morphological descriptors and access to pictures of many accessions; new fields for MLS status–species belonging or not to the Multi-Lateral System– and AEGIS status).
- A new field (cultivar group name) was developed for the **ECPGR Umbellifer Database**, managed by the University of Warwick, UK, to facilitate the identification of accessions of the same or close cultivar; this will be incorporated into a major update of the Database now planned for 2013, along with tables for characterization data based on selected minimum descriptors.
- The **European *Vitis* Database**, managed by JKI, Siebeldingen, Germany, as part of the EC GrapeGen project and with complementary ECPGR support, has been adapted to the EURISCO format and online interactive uploading modules for passport, characterization, SSR, virus, *Vitis sylvestris* population data and photos have been implemented. A photo gallery has also been included.
- The **PGR DuplicateFinder** software package was developed by CGN, The Netherlands to assist in the identification of putative duplicates in germplasm databases, as part of a project funded by the AEGIS Competitive Grant Scheme.

4.2. AEGIS

Major achievements during the period 2009-2012 are summarized below.

4.2.1. Memorandum of Understanding and Associate Member agreements

By the end of October 2012 the 32 countries listed below (and also in Box 1 above) had returned the signed Memorandum of Understanding (MoU) to Bioversity International. A total of 46 AEGIS Associate Membership Agreements between institutions holding *ex situ* accessions and the respective National Coordinators were concluded in 19 AEGIS member countries. The respective numbers are included in brackets behind the corresponding member countries below.

AEGIS member countries: Albania, Azerbaijan (2), Belarus (9), Belgium (1), Bosnia and Herzegovina, Bulgaria (1), Croatia (1), Cyprus (1), Czech Republic (8), Denmark, Estonia (3), Finland, Georgia (1), Germany (3), Hungary (1), Iceland, Ireland, Latvia, Lithuania, Montenegro, The Netherlands (2), Norway, Poland, Portugal, Romania (1), Slovakia (1), Slovenia (5), Sweden (1), Switzerland (1), Turkey (1), Ukraine and the United Kingdom (3).

4.2.2. European Collection

- a. A “simplified” procedure for the selection of European Accessions was adopted and several Working Groups produced lists of candidate accessions for inclusion in the European Collection.
- b. The first 61 garlic accessions were included in the European Collection in December 2011 through their acceptance of the conditions for their long-term conservation and continued availability by

the German and Czech National Coordinators. These accessions were flagged in EURISCO as the first European Accessions.

- c. Recently, IPK, Germany offered approximately 20 000 accessions of its crop collections that had been identified as unique German accessions or Most Appropriate Accessions maintained at IPK for consideration by the respective WGs for their inclusion in the European Collection. CGN, The Netherlands indicated their intention to take a similar approach.
- d. As the procedures for selecting European Accessions vary among WGs, an overview of the current status of the identification and selection process of accessions for the European Collection for all WGs is provided in Annex I, Table 1.

4.2.3. AEGIS Quality System (AQUAS)

- a. The template for an operational genebank manual which had been developed by the Secretariat was tested by NordGen, Sweden and IPK, Germany, approved by the AEGIS Advisory Committee and posted on the AEGIS Web site:
http://aegis.cgiar.org/fileadmin/www.aegis.org/FOR_WEB_FINAL/Template_final240910.pdf.
 So far three AEGIS Associate Members (IPK and JKI, Germany and CGN, The Netherlands) have completed the manual.
- b. As the process of revising the FAO “Genebank Standards” coincided with the AEGIS process, it was agreed with the SC to use, if possible, the revised FAO Genebank Standards rather than developing new ones. Thus, ECPGR experts and the Secretariat participated in the process (expert consultations and commenting on drafts) to revise and/or develop new standards for the following three components: 1) orthodox seed germplasm, 2) field genebanks and 3) *in vitro* cultures and cryopreservation. This resulted in a final draft document “Revision of the draft genebank standards for PGRFA” to be discussed by the Intergovernmental Technical Working Group on PGRFA at its Sixth Session (14-16 November 2012, Rome) (<http://www.fao.org/agriculture/crops/core-themes/theme/seeds-pgr/itwg/6th/en/>).
- c. Considering the fact that several Working Groups had already initiated the development of crop-specific standards prior to the revision of the general genebank standards, a harmonization process of the crop-specific and general standards has become necessary. This process is currently ongoing. The current status varies among the WGs, as summarized in Annex I, Table 2.

4.2.4. Safety-duplication Policy

Under the guidance of the AEGIS Advisory Committee, the Secretariat drafted a “Safety-duplication Policy” for the accessions that will be included in the European Collection. This document was circulated in November 2012 to the SC for approval.

4.2.5. Competitive Grant Scheme

Eight projects granted through two calls of the AEGIS Competitive Grant Scheme have been or are being implemented. The current status and, where applicable, major results of the projects are summarized in Annex I, Table 3.

4.2.6. Project proposals

- a. Two project proposals (EUROGENEBANK and Plant Gene Access) were prepared and submitted to the Seventh Framework Programme of the EU (Research Infrastructures – Support to existing research infrastructures – Integrating Activities) in 2009 and 2011 respectively. In both proposals more than 30 partners were involved in an effort coordinated by the Secretariat. Whereas both proposals met the threshold set by the EU, they were not selected for funding.

A number of project proposals including AEGIS-relevant aspects were successfully submitted to EU funding schemes and were implemented by WG members (GENRES projects on *Allium*, *Avena*, Leafy vegetables and *Vitis*; COST action on *Vitis*, etc.) (see above, Section 4.1.1).

4.2.7. Web site

The AEGIS Web site (<http://aegis.cgiar.org/home.html>) was revised and kept up-to-date. The growth of the European Collection is displayed in real time, thanks to a “routine” establishing an automatic connection with EURISCO. Visits to the Web site are monitored. Data for the period June 2011-October 2012 are shown in Fig. 1.

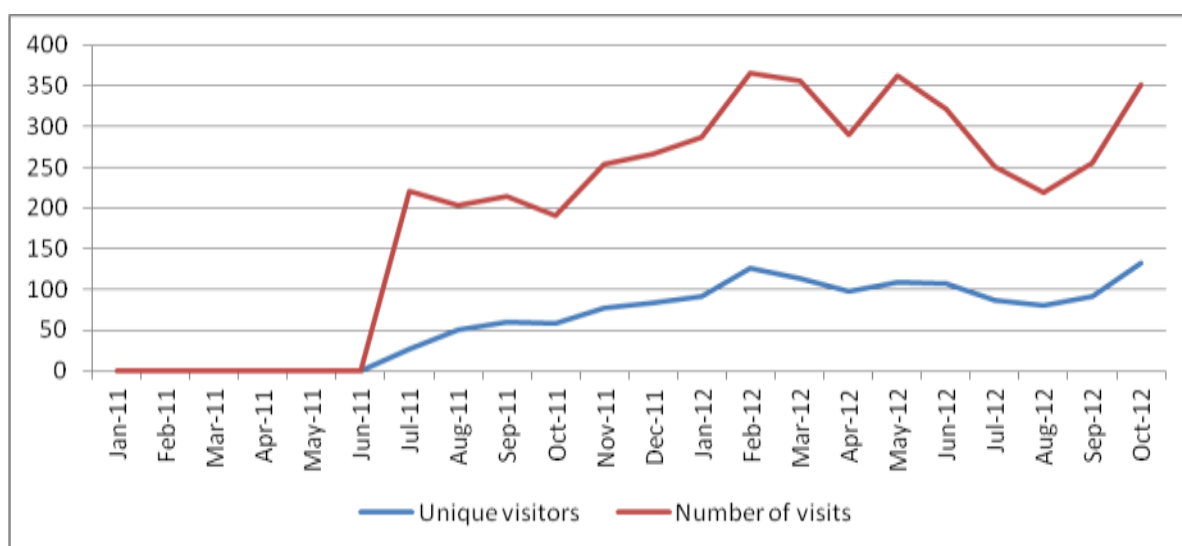


Fig. 1. Visits to the AEGIS Web site, period June 2011 to October 2012.

4.2.8. Concluding remarks and outlook

- Most countries became members of AEGIS through the signature of the MoU. The others have not indicated that they would not join AEGIS, but the process is delayed by slow decision-making procedures. The process of concluding Associate Membership Agreements is also slow in many countries and will require continued attention.
- The process of selecting accessions for the European Collection is an evolving process. It turned out that the original proposed procedure was not well understood and thus, a simplified procedure was developed and agreed. The recent initiative by IPK, Germany to offer several accessions has given a boost to the process. However the exercises carried out to select candidate European Accessions have shown that the accession-level passport data, on which the selection is based, are often a limiting factor; data completeness and quality must therefore be improved. WGs also encountered difficulties in receiving confirmations/responses from individual collection holders with respect to the identified candidate European Accessions. The Secretariat is closely following the selection process, regards it as one of the highest priorities and engages in assisting WGs where necessary and meaningful.
- The discussions and related activities on general and crop-specific standards were boosted by the FAO coordinated process of updating the Genebank Standards. In general, WGs seem to be willing to adopt the FAO standards with some crop-specific additions or modifications. This means a significant step forward with the establishment of AQUAS.
- Based on the achievements obtained through the eight projects funded by the AEGIS Grant Scheme (with two projects still outstanding), it can be concluded that competition for funds to carry out specific projects has been effective and that it provides an element of flexibility that allows a more focused and priority-driven approach in implementing the AEGIS agenda.
- The development of two AEGIS-related project proposals, through a wide partnership involving more than 30 scientists/institutes for each proposal, provided new conceptual insights for future work and pointed out weaknesses related to the large size of the network, such as: not all partners from the entire ECPGR membership can be selected; existing ECPGR Network structures can only play a subordinate role in the project; not all project-relevant technical/scientific expertises are represented in ECPGR; the collaboration between ECPGR and plant breeders is not very strong and formal collaboration with botanic gardens does not exist; the expectation from the EU to timely deliver significant outputs places a heavy responsibility on the coordinating organization to select partners that have the reputation of delivering.

- In view of the progress made with the AEGIS establishment and start of operation, compliments should be addressed to all partners involved, considering that most of the related activities had to be carried out as in-kind contributions during a period of financial constraints.

4.3. EURISCO

The list of EURISCO achievements and improvements made during the current Phase (2009-2012) is listed below.

4.3.1. Summary of facts and figures

- Total number of accessions = 1 113348 (16 Nov. 2012)
- Turnover of National Focal Points (NFPs): 27 newly appointed
- Six new National Inventories joined EURISCO
- Forty-three uploaded National Inventories
- New institutes providing data to EURISCO = 33 (11%)
- New accessions = 75586 (data quantity increased by 7%)
- New species = 1771 (5%)
- Data quality of "Sample status" field improved by 6%
- Average Web site total visits per year = 8355/y (~50% unique visits)
- EURISCO site visitors from new countries increased by 14%
- Accessions flagged in EURISCO as part of the Multilateral System (MLS) have reached a total number of 251 173 from 18 countries, representing around 22.5% of the total number of accessions recorded in EURISCO and covering 65% of the genera from Annex I of the ITPGRFA.
- AEGIS status: 2 countries flagged 143 accessions
- More than 900 reports indicating taxonomic and geo-referenced ambiguities in the uploaded data have been produced and sent to NFPs for consideration (2009-2010)
- Organized 4 EURISCO country seminars and trained 113 people
- Organized 1 regional EURISCO training workshop for 30 NFPs
- Eight E-bulletins produced between 2009 and May 2012, published on the EURISCO Web site (http://eurisco.ecpgr.org/releases/e_bulletin.html) and disseminated via e-mail to more than 200 individuals.
- Two Factsheets on EURISCO produced now available in 15 languages
- More than 20 travels have been made for training or dissemination purposes related to EURISCO. More than 30 presentations, several posters and publications were produced (abstracts, newsletter, peer-reviewed, training materials)
- Scientific and technical support to NFPs and users reached an average of 250-300 exchanges of emails per year
- New EURISCO Web site launched on 17 November 2011.

4.3.2. Improvements

- Internet functionalities were improved with the implementation of new search options and the introduction of various features that improve effectiveness and user-friendliness:
 - The revision included upgrading of the functionalities and search capacity
 - New AEGIS, MLS and Standard Material Transfer Agreement (SMTA) fields made available
 - Downloading option of all multi-crop passport descriptors (MCPD) + EURISCO fields
 - More accurate results of the taxonomy searches including synonyms
 - Upgrading the Web site based on users feedback
 - results displayed in selected views from the dropdown menu
 - possibility to create a custom report
 - improved Passport view page with Google maps for the accession (where latitude/longitude have been provided)
 - generally making it more attractive and user-friendly
 - New "News" section on the EURISCO Web site home page

- RSS feed added to the Web site
- To further increase data quality and completeness in the EURISCO, real time taxonomy and geo-referencing reports are available on countries' upload pages
- taxonomy and geo-referencing reports downloaded in both Excel and for Google Earth viewing are available by institute
- New EURISCO Data Sharing Agreement (DSA) developed, and sent to all the National Focal Points (NFPs) and National Coordinators for signature (20 DSA signed at November 2012)
- New Terms of Use were also prepared by the legal experts and made available on the EURISCO website
- A "road map to the inclusion of characterization and evaluation (C&E) data in EURISCO" was drafted
- Maintenance, general fixes and database management have been provided for the Web site and database
- Current development: The database backbone system is being redeveloped (upgrading and revising of the so-called 'staging area'); this will facilitate the upload of passport data and will provide the backbone structure enabling the upload of characterization and evaluation (C&E) data.
- Ongoing "Comparative analysis between EURISCO and WIEWS and ECCDBs" on current gaps on passport data/collections.

4.4. EURISCO and the European Central Crop Databases (ECCDBs)

At the 11th SC meeting (September 2008, Sarajevo) a vision for a European PGR information landscape was presented by Th. Van Hintum, announcing the need for a changing role of CCDBs from passport data gathering points to crop-specific PGR entry portals. At the 12th SC meeting (December 2010, Bratislava) it was mentioned that the role and use of CCDBs should be elucidated. The relationship between EURISCO and the CCDBs is an issue that has constantly been raised in the Working Group meetings.

Several WGs were confronted with the difficulty to sustain the development of their CCDBs and were hoping to use EURISCO for the selection of accessions for the European Collection, and as the most reliable source of quality passport data. However, they faced various problems and frustration, since EURISCO did not contain many important data (additional accessions and C&E data) that were available only from the CCDBs. These WGs (Barley, Forages, Solanaceae and Wheat) recommended the SC to invest more in EURISCO to make sure that all relevant and important data are accessible through it. They have also offered that the Crop DB managers could take the role of data curators for specific crop sections of EURISCO. On the other hand, other WGs continue to feel more comfortable with their CCDB, which they consider easier to search, better suitable to accommodate crop-specific C&E data, and more flexible for updating and for the inclusion of additional functionalities. These WGs have tended to develop their crop-specific DBs with various features (synonym searches, duplicate searches, images, accessions' comparison, molecular markers data, GIS features, links to *in situ* locations of wild relatives, cultivar data, taxonomy standardization, pedigree data, evaluation data, individual tree data, etc.). These WGs (*Avena*, *Beta*, *Malus/Pyrus*, *Prunus*, *Vitis*) have often benefited from EU or other funds that have spurred the further development of their databases. These WGs tend to use EURISCO as a source of passport data, whenever these are missing in their CCDB, but they devote all their efforts to improve and analyse the data within their CCDB. One problem encountered by these WGs is that the selection of AEGIS accessions can only consider accessions that are officially included in EURISCO by the National Inventories (NIs). They also face problems of sustainability of the development of their CCDBs whenever international projects are concluded, unless national or institutional commitments are secured for the continuation of the databases. In some cases, DB managers have feared pressures by ECPGR to terminate CCDBs in their current form, which would not help to sustain such commitments.

The two types of approaches described above need not be seen as incompatible. The principles expressed in the "Vision paper" presented in Sarajevo still hold. The reality is showing an increasing role of EURISCO as the official repository for all crops' passport data, as well as a changing role of the

CCDBs, developing more sophisticated features. The further strengthening of EURISCO is however necessary to enable those WGs that do not wish or cannot invest in CCDBs, so that they can use EURISCO as a reliable and sufficient tool to analyse their crop data for AEGIS purposes (definition of European accessions, identification of gaps, etc.). At the same time, a stronger EURISCO can also facilitate the development of CCDBs into specialized crop portals, whenever they are sustained by project funds or by in-kind support from the WGs. Various WGs have requested the possibility to discuss the relationship between EURISCO and the CCDBs in a meeting where all NI Focal Points and CCCDB managers could eventually reach a common understanding and harmonization of intents for the future, even if maintaining compatible diversity of approaches.

The opportunity to organize such a meeting in the near future is raised for consideration of the SC.

4.5. Cross-cutting activities

A budget line for cross-cutting activities and zero funds was included in the ECPGR budget for Phase VIII, with the intention to raise additional voluntary funds. This was possible in the case of the ECPGR Independent External Review initiative for which € 31 000 were raised with contributions from Finland, Nordic countries, Switzerland and UK. The implementation of this activity has been described through several products and specifically in the 2010 Progress Report.

Crop Networks were also encouraged to carry out cross-cutting activities, despite their limited budgetary situation. In this context, the Cereals Network organized a pre-breeding workshop in 2009; the Fruit Network developed methodologies to identify synonyms and worked towards the establishment of a Fruit Database concept.

4.6. Inter-regional Cooperation

Following the decision made by the SC in Sarajevo (2008), new Terms of Reference for the Inter-regional Cooperation Network Coordinating Group were drafted by the Secretariat and agreed by the SC in 2009. These ToRs focused on the objective to convey to other regions similar views as those prevailing in Europe regarding the sharing of tasks, material and information, at the same time facilitating and promoting the ratification and implementation of the International Treaty. Activities were carried out in collaboration with Bioversity and the Treaty Secretariat (*see below, Section 5.2*).

4.7. ECPGR Web site

A renewed ECPGR Web site was launched in April 2011, offering an easier and better structured access to contacts, databases, budgets, meetings, publications, workplans, constitutional and other documents related to ECPGR. Web-enabled databases allow the Secretariat to make easily available the latest contact details of the WG members, the status of use of country quota and participation in meetings. Search masks were prepared to allow searches for publications, past meetings and germplasm databases.

A public awareness page is linked to an archive of ECPGR public awareness tools (leaflets and brochures) and to a list of national public awareness activities with information, products and links kindly provided by a number of national programmes

(http://www.ecpgr.cgiar.org/Introduction/PA_NatProg.htm).

The average number of hits per day gives an indication of the impact of the ECPGR Web site. Data for the period June 2011–October 2012 are shown below in Fig. 2.

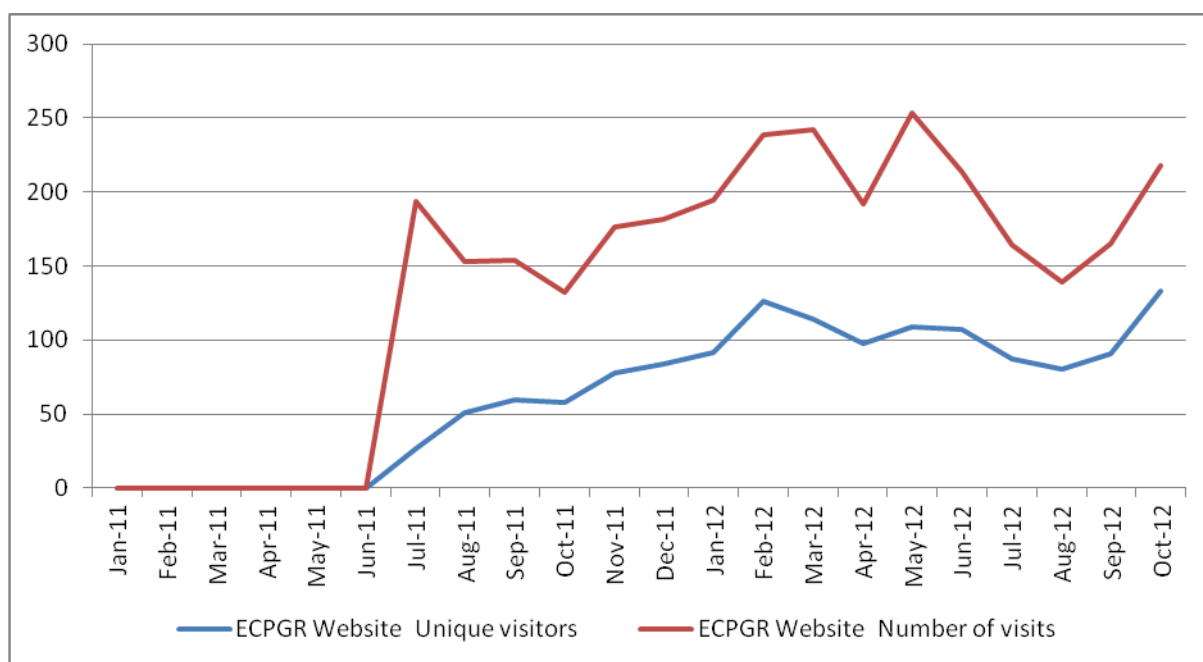


Fig. 2. Visits to the ECPGR Web site, period June 2011 to October 2012.

4.8. Publications

4.8.1. Reports and scientific articles

The status for Phase VIII at November 2012 is as follows:

- 28 ISBN publications (reports of ECPGR meetings) published online (2 of them also printed)
- 8 electronic reports uploaded on the Web (minutes and executive summaries of ECPGR meetings)
- 14 ECPGR-related publications co-authored by the Secretariat or by ECPGR WG members as a result of ECPGR funding.

The list of the above publications is available in Annex III.

The publication strategy defined at the SC meeting in Sarajevo (2008) was successfully implemented. The backlog of past publications in preparation was cleared in 2011. Advanced drafts of the meeting reports are usually available online within 3 months after the meeting, and the final version published online within 6 months.

4.8.2. Bioversity Newsletter for Europe

Seven issues of the Bioversity Newsletter for Europe were published between January 2009 and April 2012. The Newsletter, produced with a partial contribution from the ECPGR budget, includes reports on all ECPGR activities. Following the closure of its Regional Office for Europe during its structural reorganization, Bioversity International discontinued the production of the Newsletter.

5. Links with other initiatives and developments in international fora

The main interactions between ECPGR and European or international organizations as well as other Networks and initiatives during Phase VIII and the major outcomes are summarized below.

5.1. European Commission

The ECPGR Networks continued their involvement in the development and implementation of a few projects that were started in the previous Phase: AEGRO (*in situ* management), AVEQ (*Avena* for quality in human consumption), EURALLIVEG (vegetative *Allium* core collection), LEAFY VEG (use of leafy vegetables germplasm) and GrapeGen06 (management of *Vitis* genetic resources) (*see above, Section 4.1.1*).

The communication efforts undertaken by the Secretariat and Bioversity in 2009 led to the adoption of significant research topics on agricultural biodiversity in the Seventh Framework Programme, which resulted in two successful projects: PGR Secure (“Novel characterization of crop wild relative and landrace resources as a basis for improved crop breeding”, www.pgrsecure.org) (*see above, Section 4.1.3*) and FruitBreedomics (“Bridging the gap between genomics and fruit breeding”, <http://www.fruitbreedomics.com/>).

A topic on the “Strengthening of the European research infrastructure for the conservation and use of PGRFA” was also promoted and in two occasions (2009 and 2011) the Secretariat coordinated AEGIS-related project proposals (*see also above, Section 4.2.6*). However, the fact that for both proposals the threshold was met but none of the two was finally selected for funding generated considerable disappointment. An invitation to prepare a proposal for a topic to be included in yet another call of the successor of Framework Programme VII (Horizon 2020), within the same very ill-fitting conditions of the Integrated Research Infrastructures scheme as the previous two proposals, was eventually not followed up. This decision, after consultation with ExCo, was formally communicated to the responsible coordinator in the European Commission.

The ECPGR Secretariat participated in the survey for the evaluation of the Community programme on genetic resources in agriculture - Council Regulation (EC) No 870/2004, by sending inputs for an e-consultation of stakeholders that was concluded in January 2012. In June 2012, at the 26th meeting of the Committee on the Conservation, Characterisation, Collection and Utilisation of Genetic Resources in Agriculture, member state delegates referred to the importance of making links to ECPGR.

Following the recommendations made by the Steering Committee at their 11th meeting in September 2008, a Task Force was initially established and then revitalized in December 2010, to prepare a strategy paper in order to coordinate actions towards and interactions with the EU. The strategy paper, finalised in 2012 (see background documents to 13th SC meeting) includes a series of recommendations and proposed actions.

5.2. The International Treaty on PGRFA

Capacity building workshops were organized by the Inter-regional Cooperation Network in two occasions, in Uganda in 2009 with the East Africa Plant Genetic resources Network (EAPGREN) and in Turkey in 2011 with the Near East and North Africa Plant Genetic Resources Network (NENA PGRN). The objectives were to promote communication and knowledge across PGR regional networks, in view of facilitating the implementation of the International Treaty. The Treaty Secretariat was actively involved in both events, attending the meetings and supporting the initiative.

The Treaty Secretariat acknowledged ECPGR’s outstanding contribution to capacity building for developing countries. The financial support budgeted by ECPGR for the organization of inter-regional workshops was only partially used, since as a follow-up to consultation with the Treaty Secretariat, further capacity building events through inter-network collaboration did not materialize.

EURISCO (*see above, Section 4.3.1*) allows displaying those accessions from European collections that are part of the Multilateral System. As of November 2012, 18 countries have flagged in EURISCO a total of 251 173 accessions.

AEGIS (*see above, Section 4.2*) provides a mechanism for regional cooperation in the implementation of the Treaty in the European region. Wherever possible, AEGIS uses the Treaty’s mechanisms, procedures and instruments, including the Standard Material Transfer Agreement (SMTA), and

thereby contributes to its effective implementation. The 143 *Allium* and 21 *Vitis* accessions designated as part of AEGIS are *de facto* extending the Multilateral System to non-Annex I crops.

5.3. Global Crop Diversity Trust (The Trust)

A project funded by the Global Crop Diversity Trust for the regeneration and safety-duplication of regionally prioritized crop collections was prepared by the ECPGR Cereals Network and the Oil and Protein Crops Network, involving 11 partner institutions from 10 European countries (Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Greece, Hungary, Israel and Portugal). The project was granted nearly US\$ 130 000 from the Trust. Main deliverables were the following:

- Threatened accessions of cereals (3047) and grain legumes (1091) were regenerated;
- Passport and characterization data were collected and made publicly available;
- Accessions were safety-duplicated at Svalbard and CGIAR centres.

The role of the ECPGR Secretariat, acting as intermediary between the Trust and the European partners, has been facilitated by the existence of the ECPGR Networking community and its long-term body of knowledge and of interactive mechanisms. The project has been adopted by the ECPGR Secretariat, since it was an opportunity in line with the needs and principles of the Networks. At the same time, the project has hijacked time and resources of the Secretariat staff, especially with the requirement of laborious financial and technical reports. This effort has been compensated to ECPGR by the Trust with US\$ 14 000 that have been used to cover programme assistant's costs.

The ECPGR Secretariat and the Documentation and Information (D&I) Network closely followed the developments of the project entitled "Global Information on Germplasm Accessions" (GIGA), jointly funded by the Trust, through a grant from the Bill and Melinda Gates Foundation, Bioversity International, and co-sponsored by the Secretariat of the International Treaty. ECPGR participated with a representative observer in the project's International Steering Committee meetings. The EURISCO data were provided for inclusion into GENESYS, the global online portal to information on PGR accessions, currently maintained at Bioversity International. Given the obvious complementarity between EURISCO and GENESYS, plans were made by the respective managers to proceed towards a convergence between the two databases, however retaining the EURISCO identity. While GENESYS is approaching its Phase II with an increasing leadership of the Trust, EURISCO is expected to continue to be a major data donor to GENESYS, and the ECPGR D&I Network to be increasingly involved in the governance of GENESYS.

5.4. FAO

ECPGR members interacted with the Seeds and Plant Genetic Resources team of FAO's Plant Production and Protection Division (AGP), mainly on activities related to the implementation of the Second Global Plan of Action for PGRFA and in preparation for the Second report on the State of the World's PGRFA.

A specific effort was made by the ECPGR Secretariat to facilitate the contribution of inputs from WG members to the drafting of the revised "Genebank Standards for PGRFA" (*see above, Section 4.2.3*).

ECPGR members of the D&I Network also provided inputs and comments to the revision of the FAO/Bioversity "Multi-Crop Passport Descriptor List", leading to the release of version 2, June 2012.

5.5. EUCARPIA and the European Seed Association (ESA)

The ECPGR Secretariat participated in the 19th EUCARPIA Genetic Resources Section Meeting (26-30 May 2009, Ljubljana, Slovenia), contributing with an invited presentation on AEGIS and a poster on EURISCO. The meetings of the EUCARPIA Crop sections are usually occasions for the ECPGR WG members to meet and to update their progress and coordination on the implementation of WG workplans, as well as to present their activity to wider audiences.

Invitation to WG meetings have regularly been forwarded to the focal point for the European Seed Association (ESA), but these have never raised sufficient interest. Positive but limited interactions with ESA have taken place through their representative in the AEGIS Advisory Group (Anke van den Hurk, Plantum, The Netherlands). Clearly, the connection between ECPGR and the private sector has

not yet taken off. During the preparation of the Plant Gene Access project proposal, a Work Package involving the private sector was developed, with the objective of strengthening the ties between genebanks and the private industry concerned with plant genetic resources. This could be a starting model for future collaborative initiatives.

5.6. SEEDNet

Collaboration with the South East European Development Network on Plant Genetic Resources (SEEDNet), funded by the Swedish International Development Agency (Sida) continued during 2009 with participation of the ECPGR Coordinator in the SeedNet Regional Steering Committee meetings, mainly with the objective to exchange information. After the conclusion of the support from Sida in 2010, the Network was expected to continue on a self-funded basis. Interactions with ECPGR have however diminished. As decided by the ECPGR SC in Sarajevo (2008), the observer status of the Coordinator of SEEDNet in the ECPGR Steering Committee has ceased to be effective after the conclusion of the Sida-funded project.

6. Financial status

The last available official figures are related to the closure of financial year 2011. These were provided to the Steering Committee members and are available as background document.

In this Section, the financial status of ECPGR is summarized and assumptions are made about the estimated final financial result, by adding the forecast expenditures for 2013 (See Annex II) to the estimated closure data for the 2012 financial year.

6.1. Contributions received for Phase VIII (Table 1)

At 31 October 2012, the total regular contributions received for Phase VIII amounted to € 1 813 535. Additional € 31 076 were received as voluntary contributions (for details see Section 6.2) with an agreement to use these funds for the ECPGR External Independent Review.

At 31 October 2012, outstanding contributions for Phase VIII amounted to € 401 915.

The most critical outstanding contributions are from members that have not paid any contribution to Phase VIII so far: Armenia, Belgium, Georgia, Malta, Portugal, Russian Federation and Ukraine. The total annual contributions of these seven countries amount to € 62 650 (x5 =€ 313 250).

6.2. Budget and expenditures in Phase VIII (Table 2)

The original total budget for Phase VIII (€ 2 759 002) was increased by € 31 076 representing the additional voluntary contributions paid by Switzerland (€ 10 000), UK (£ 1500), Finland (€ 750) and the Nordic Countries (DKK 140 000). The original budget was also increased by an additional € 139 975 representing the funds carried over from the previous Phase. The total budget for the Phase VIII is therefore set at € 2 930 053.

Expenditures for staff costs have been lower than originally estimated and the expected balance of these expenditures at the end of 2013 could be as high as € 120 000.

Expenditures for Crop and Thematic Network activities have also been maintained on average below the budget, partly due to lower than expected costs for the meetings, partly to slow implementation of some activities planned by the Networks and partly as several lower priority activities were stopped. Detailed expenditures of each Network have been made available as background documents. Other savings were made with lower costs for the Newsletter, since its production was terminated by Bioversity in 2012. Also the External Independent Review cost less than the funds raised for it.

6.3. Financial status of Phase VII (Tables 3 and 4)

As previously reported, carry-over funds from Phase VII have been accrued to the total budget of Phase VIII (see Table 2). Table 3 shows that these funds (€ 139 975) were almost entirely spent, in conformity with the allocation agreed by the Steering Committee in October 2009. The balance is € 11 935. However, it should be noted (see Table 4) that outstanding contributions related to Phase VII are still due from Armenia, Georgia, Israel and Malta, amounting to € 34 300.

6.4. Conclusion (Tables 5 and 6)

The estimate made by the Secretariat on the total expenditures expected in 2013 to complete all the activities that are still planned by the Networks amount to about € 570 000. Such level of expenditures would result in a final balance of about € 306 000 for Phase VIII, provided all outstanding contributions were received. The current total amount of outstanding contributions from Phase VII and VIII is € 436 215. Therefore, it will be critical that member countries honour their dues quickly. During its meeting in Vienna, the Steering Committee should be able to verify the likelihood of promptly obtaining outstanding contributions and therefore it can adjust the budget and plan expenditures for 2013 according to such expectations.

7. Coordinating Secretariat

During Phase VIII, the following staff members have worked as part of the ECPGR Secretariat:

- **Lorenzo Maggioni** (Coordinator, 100% from 2009 to 2012)
- **Jan Engels** (AEGIS Coordinator, 50% from 2009 to 2012)
- **Elinor Lipman** (Scientific Assistant, based in Montpellier, France, involved in the compilation and layout of ECPGR publications and support to AEGIS and WG activities and to the Secretariat, 50% from 2009 to 2012)
- **Lidwina Koop** (Programme Assistant, 75% in 2009 and 100% from 2010 to 2012)
- **Aixa Del Greco** (Scientific Assistant involved in support to the Networks and public awareness, 50% until April 2009)

The job descriptions for the ECPGR Secretariat staff are available online at http://www.ecpgr.cgiar.org/ecpgr_secretariat.html.

The scientific and technical contributions, as well as management and administrative support provided by Bioversity International and its staff to the work of ECPGR, is also acknowledged. In particular, Bioversity provided funding for the EURISCO Coordinator (Sónia Dias) and technical inputs to the maintenance and development of EURISCO.

★★★

Lorenzo Maggioni
ECPGR Coordinator

with inputs from Sónia Dias, Jan Engels, Lidwina Koop, Elinor Lipman
 and from the ECPGR WG Chairs and Vice-Chairs

Rome, 23 November 2012

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Annex I. Major achievements of AEGIS during the period 2009-2012

Table 1. Current development status of the establishment of the European Collection by ECPGR Working Groups (November 2012)	20
Table 2. Current development status of the establishment of general and crop-specific genebank standards by ECPGR Working Groups (November 2012).....	25
Table 3. Achievements of the projects that have been granted funds from the AEGIS Competitive Grant Scheme (November 2012)	29

Table 1. Current development status of the establishment of the European Collection by ECPGR Working Groups (November 2012)

Network/ Working Group	Agreed procedures to select European Accessions	Concrete plans how to select accessions exist	First selection of possible candidate accessions	Tentative list, prepared by WG, of candidate European Accessions for acceptance by countries	Offers by countries under discussion by WGs	Flagged European Accessions in EURISCO	Remarks
Cereals							
<i>Avena</i> (<i>AEGIS model crop</i>)	Detailed procedure agreed. Selection criteria established.				137		Ad hoc meeting to select European Accessions had to be postponed.
Barley	Agreed procedure to select candidate accessions with focus on country of origin.				1595		
Wheat	Selection criteria for candidate European Accessions established.			First set of 107 accessions proposed for flagging. Additional lists of accessions for flagging within 2012 planned.	1386		WG members invited to identify genetically unique accessions in their genebanks by end 2013.
Forages							
Forages	Agreed procedure			10 485 candidate European Accessions of 10 forage species/groups selected	5807		Selection of candidate accessions a continuing process

Table 1. Current development status of the establishment of the European Collection by ECPGR Working Groups (November 2012) (cont.)

Network/ Working Group	Agreed procedures to select European Accessions	Concrete plans how to select accessions exist	First selection of possible candidate accessions	Tentative list, prepared by WG, of candidate European Accessions for acceptance by countries	Offers by countries under discussion by WGs	Flagged European Accessions in EURISCO	Remarks
Fruit							
<i>Malus/Pyrus</i>	All WG members to identify 'most obvious' candidate European Accessions in their collection, using a to-be-prepared form. After analysis list of candidate accessions will be prepared (March 2013).						Selection criteria are 'originated in country' and having been validated as true to type.
<i>Prunus</i> (<i>AEGIS model crop</i>)	Procedure discussed. Selection criteria established.		1483 unique cherry accessions identified				
<i>Vitis</i>	An agreed procedure for selecting European Accessions			Tentative list of almost 2500 autochthonous accessions identified.			Important role of Vitis Database in selection process.
Oil and Protein Crops							
Grain Legumes				36 Czech pea accessions	3525		WG had so far no opportunity to discuss AEGIS implementation.

**Table 1. Current development status of the establishment of the European Collection by ECPGR Working Groups (November 2012)
(cont.)**

Network/ Working Group	Agreed procedures to select European Accessions	Concrete plans how to select accessions exist	First selection of possible candidate accessions	Tentative list, prepared by WG, of candidate European Accessions for acceptance by countries	Offers by countries under discussion by WGs	Flagged European Accessions in EURISCO	Remarks
Sugar, Starch and Fibre Crops							
<i>Beta</i>	Selection criteria to identify MAAs agreed. Agreement to include <i>Beta</i> Core Collection Accessions and those used by French AKER project.			International <i>Beta</i> Database Manager will lead process to identify specific accessions for flagging before end 2012.	394		Agreement to also include accessions of threatened species and accessions collected in genetic reserves.
Fibre Crops					286		WG needs more time to digest AEGIS requirement. Not fully convinced of value of European Collection. Some legal issues hamper European Hemp Collection.

**Table 1. Current development status of the establishment of the European Collection by ECPGR Working Groups (November 2012)
(cont.)**

Network/ Working Group	Agreed procedures to select European Accessions	Concrete plans how to select accessions exist	First selection of possible candidate accessions	Tentative list, prepared by WG, of candidate European Accessions for acceptance by countries	Offers by countries under discussion by WGs	Flagged European Accessions in EURISCO	Remarks
Medicinal and Aromatic Plants	Agreement to work on European Collection. No follow up action.				816		<i>Origanum</i> project could provide data for selecting candidate accessions.
Potato		Protocol being developed, using SSR markers	500		497		Protocol for identification of duplicates/ mislabelled accessions being finalized
Vegetables							
<i>Allium</i> (<i>AEGIS model crop</i>)	Yes				98	143 Poland to flag their accessions.	Workplan for seed- propagated <i>Allium</i> accessions. First list of wild spp.
<i>Brassica</i> (<i>AEGIS model crop</i>)	Agreed selection procedure was tested for <i>B. rapa</i> but insufficient data available to complete process.				1638		
Cucurbits	Agreement to use newly updated Cucurbits database to search for candidate accessions.				214 (DEU) 1064 (BUL)		

**Table 1. Current development status of the establishment of the European Collection by ECPGR Working Groups (November 2012)
(cont.)**

Network/ Working Group	Agreed procedures to select European Accessions	Concrete plans how to select accessions exist	First selection of possible candidate accessions	Tentative list, prepared by WG, of candidate European Accessions for acceptance by countries	Offers by countries under discussion by WGs	Flagged European Accessions in EURISCO	Remarks
Leafy Vegetables	First lists for lettuce and spinach generated following agreed procedure, including identifying duplicates. Thereafter chicory and minor leafy vegetables will follow.				444		+ 281 minor leafy vegetables; DuplicateFinder used.
Solanaceae		Yes	155 wild tomatoes; 168 wild <i>Capsicum</i> ; 246 <i>Physalis</i> ; 11 <i>Cyphomandra</i> ; 13 Pepino	2506 <i>Capsicum</i> ; 4756 tomato; 696 <i>Solanum</i> spp.; 4 <i>Cyphomandra</i> ; 42 <i>Physalis</i>	1262		
Umbellifer Crops	Workflow for selection of candidate accessions developed for carrots. Methodology agreed.		1415 carrot accessions selected. Need cross-checking and confirmation and to be extended to landraces and CWRs.		546		In 2013 Apiaceae
Other crops					1006		Minor crops
Total number of accessions offered by: Germany					Approx. 20 000		

Table 2. Current development status of the establishment of general and crop-specific genebank standards by ECPGR Working Groups (November 2012)

Network/ Working Group	General standards drafted, developed prior to the FAO process	General standards harmonized with FAO general standards	Crop-specific standards drafted without harmonization with FAO general standards	Crop-specific standards drafted and harmonized with FAO general standards	Crop-specific standards for specific operations (see remarks)	Remarks
Cereals						
<i>Avena</i> (<i>AEGIS</i> model crop)			Draft quality minimum standards for routine operations developed; number of issues need to be resolved.			Ad hoc meeting to proceed with process had to be postponed.
Barley	Task Force formed to draft protocols for species specific maintenance of wild <i>Hordeum</i> spp and cultivated barley.		Development of crop-specific minimum standards planned for May 2012.			
Wheat					Protocols for specific routine management of wild species planned by mid 2012.	No need for crop-specific standards in addition to FAO standards.
Forages						
Forages			Minimum standards for regeneration			

Table 2. Current development status of the establishment of general and crop-specific genebank standards by ECPGR Working Groups (November 2012) (cont.)

Network/ Working Group	General standards drafted, developed prior to the FAO process	General standards harmonized with FAO general standards	Crop-specific standards drafted without harmonization with FAO general standards	Crop-specific standards drafted and harmonized with FAO general standards	Crop-specific standards for specific operations (see remarks)	Remarks
Fruit						
<i>Malus/Pyrus</i>				Agreement to use FAO standards for field genebanks as basis for deciding whether any crop-specific standards are needed.		
<i>Prunus</i> (<i>AEGIS model crop</i>)			Minimum technical standards prepared.			
<i>Vitis</i>	WG agreed with draft safety-duplication policy and specified desirable approach for <i>Vitis</i> .					FAO standards for non-orthodox seeds and clonally propagate plants agreeable with a few additions.
Oil and Protein Crops						
Grain Legumes						WG had so far no opportunity to discuss AEGIS implementation.

Table 2. Current development status of the establishment of general and crop-specific genebank standards by ECPGR Working Groups (November 2012) (cont.)

Network/ Working Group	General standards drafted, developed prior to the FAO process	General standards harmonized with FAO general standards	Crop-specific standards drafted without harmonization with FAO general standards	Crop-specific standards drafted and harmonized with FAO general standards	Crop-specific standards for specific operations (see remarks)	Remarks
Sugar, Starch and Fibre Crops						
<i>Beta</i>	Protocol on 'seed increase' was already agreed some time ago and will be checked on its validity by curators before end 2012.				Guidelines for multiplication of <i>Beta nana</i> need to be developed.	Proposal made to adopt the FAO standards for orthodox seeds as well as the crop-specific seed increase protocol
Medicinal and Aromatic Plants	Agreement to adopt quality standards for conservation.				Protocol for use of insects for pollination during regeneration in technical isolation; Descriptors for priority spp.	
Vegetables						
<i>Allium</i> (<i>AEGIS model crop</i>)					Recommendations for field maintenance of shallot and garlic; Protocols for <i>in vitro</i> and cryopreservation of garlic; Phytopsanitary standards adopted	

Table 2. Current development status of the establishment of general and crop-specific genebank standards by ECPGR Working Groups (November 2012) (cont.)

Network/ Working Group	General standards drafted, developed prior to the FAO process	General standards harmonized with FAO general standards	Crop-specific standards drafted without harmonization with FAO general standards	Crop-specific standards drafted and harmonized with FAO general standards	Crop-specific standards for specific operations (see remarks)	Remarks
<i>Brassica</i> (<i>AEGIS</i> model crop)	Summary of current practices for routine genebank operations available. Draft general standards prepared.		Draft minimum standards prepared			
Cucurbits	General guidelines for regeneration, processing and storage agreed in 2011.					
Leafy Vegetables	Inventory of genebank operations established for lettuce and spinach				Minimum standards are planned to be developed on basis of inventory.	Progress hampered by cancelled meeting.
Solanaceae		FAO standards for orthodox seeds adopted.			Minimum protocols for seed regeneration and storage.	No need for more stringent standards
Umbellifer Crops					Proposal for crop-specific minimum standards made; final agreement by WG outstanding.	Regeneration; long-term conservation

Table 3. Achievements of the projects that have been granted funds from the AEGIS Competitive Grant Scheme (November 2012)

Project title	Coordinating institute	Major achievements	Remarks
Towards comprehensive pea germplasm management for future use	Agritec Plant Research, Czech Republic	<ul style="list-style-type: none"> Pea core collection of 34 accessions (out of 166) Czech and Slovak origin using morphological and molecular data Methodology to use different types of data in selecting core collection accessions 	
Cryopreservation of young inflorescence bases in bolting garlic for germplasm storage	Leibniz Institute of Plant Genetics and Crop Plant Research (IPK), Germany	<ul style="list-style-type: none"> New cryopreservation method using unripe inflorescences as a new source of garlic organs Method to combine ripe bulbils and unripe inflorescences allows to speed up the cryopreservation procedures 	
Establishment of the European Forages Collection	MTT AgriFood Research, Finland	<ul style="list-style-type: none"> ECPGR/AEGIS workshop agreed on procedure to select candidate European Accessions. A list of 10 485 candidate accessions of 10 forages species/groups was created for confirmation. A number of issues related to EURISCO were identified for solution by ECPGR and EURISCO. 	
Assessment of Unique Material in the European Collections of Umbellifer Crops, University of Warwick, United Kingdom	University of Warwick, United Kingdom	<ul style="list-style-type: none"> 1281 advanced cvs carrot acc. selected as candidate European Accessions 252 breeding material carrot acc. selected as well Third list of possible duplicates for which info is lacking to select MAAs 	

Table 3. Achievements of the projects that have been granted funds from the AEGIS Competitive Grant Scheme (November 2012) (cont.)

Project title	Coordinating institute	Major achievements	Remarks
“PGR Duplicate Finder”, a software package to assist in the identification of putative duplicates in germplasm databases	Centre for Genetic Resources (CGN), The Netherlands	<ul style="list-style-type: none"> • Software tool developed to support the identification of duplicates and of MAAs • User manual (short version) 	
Improving the prerequisites for a European rye collection	Nordic Genetic Resource Centre (NordGen)		Progress report received. Final report expected end of 2012.
Identification of 240 old potato clones having unreliable variety name by means of fingerprinting using 12 microsatellite (SSR) markers to assist in setting up the AEGIS collection for potato	Centre for Genetic Resources (CGN), The Netherlands		Project has been granted a no-cost extension until the end of 2012 in order to complete analyses.
<i>Brassica</i> selection criteria for the identification of the MAAs: relate to the <i>Brassica oleracea</i> of Iberian collection	Banco Português de Germoplasma Vegetal, INRB, Portugal	<ul style="list-style-type: none"> • Project concluded and final report submitted. • A selection procedure combining ITS and SSR data with germinability and seed stock levels was implemented • A first list of 42 genetically diverse candidate European Accessions of <i>Brassica oleracea</i> of Iberian origin (out of 100 pre-selected ones) was generated. • Use of molecular data in cluster analysis in fine-tuning the selection of <i>B. oleracea</i> accessions for European Collection and in identifying duplicates had worked well. 	

Annex II. ECPGR Financial status – Phase VIII (status at 31 October 2012)

Table 1. ECPGR Contributions received by 31 October 2012 (in €)	32
Table 2. ECPGR Phase VIII (2009-2012) Contributions and Expenses (in €).....	33
Table 3. ECPGR Phase VII (2004-2008) Expenses during Phase VIII (in €).....	34
Table 4. ECPGR funding status for Phase VII as at 31 October 2012 (in €).....	35
Table 5. Estimated expenditures for ECPGR Phase VIII (in €).....	36
Table 6. Estimated expenses 2013 for Crop and Thematic Networks (in €).....	37

Table 1. ECPGR Contributions received by 31 October 2012 (in €)
A. ECPGR Contributions for Phase VIII received by 31 October 2012

Annual contribution	Participating country	2009	2010	2011	2012	Total received	Outstanding
2,750	Albania	2,750	2,750	2,750	2,750	11,000	-
2,750	Armenia	-	-	-	-	-	11,000
18,200	Austria	18,200	18,200	18,200	18,200	72,800	-
2,750	Azerbaijan	2,750	2,750	2,750	2,750	11,000	-
2,750	Belarus	(*)	2,750	2,750	2,750	8,250	-
18,200	Belgium	-	-	-	-	-	72,800
2,750	Bosnia and Herzegovina	2,750	2,750	2,750	-	8,250	2,750
2,750	Bulgaria	2,750	2,750	2,750	2,750	11,000	-
7,000	Croatia	7,000	7,000	7,000	-	21,000	7,000
7,000	Cyprus	7,000	7,000	7,000	7,000	28,000	-
11,000	Czech rep	11,000	11,000	11,000	11,000	44,000	-
18,200	Denmark	18,200	18,200	18,200	14,135	68,735	4,065
2,750	Estonia	2,750	2,750	2,750	2,750	11,000	-
11,000	Finland	11,000	11,000	11,000	11,000	44,000	-
50,000	France	50,000	50,000	50,000	-	150,000	50,000
2,750	Georgia	-	-	-	-	-	11,000
50,000	Germany	50,000	50,000	50,000	50,000	200,000	-
11,000	Greece	11,000	11,000	11,000	-	33,000	11,000
11,000	Hungary	11,000	11,000	9,400	-	31,400	12,600
7,000	Iceland	7,000	7,000	7,000	7,000	28,000	-
11,000	Ireland	11,000	11,000	11,000	11,000	44,000	-
11,000	Israel	-	11,000	11,000	-	22,000	22,000
50,000	Italy	50,000	50,000	50,000	50,000	200,000	-
2,750	Latvia	2,750	2,750	2,750	2,750	11,000	-
7,000	Lithuania	7,000	7,000	7,000	7,000	28,000	-
2,750	Macedonia (FYR)	2,750	2,750	2,750	2,750	11,000	-
2,750	Malta	-	-	-	-	-	11,000
2,750	Montenegro	2,750	2,750	2,750	-	8,250	2,750
18,200	Netherlands	18,200	18,200	18,200	18,200	72,800	-
18,200	Norway	18,200	18,200	18,200	18,200	72,800	-
11,000	Poland	11,000	11,000	11,000	11,000	44,000	-
11,000	Portugal	-	-	-	-	-	44,000
7,000	Romania	7,000	7,000	7,000	7,000	28,000	-
18,200	Russian Federation	-	-	-	-	-	72,800
2,750	Serbia	2,750	2,750	2,750	-	8,250	2,750
7,000	Slovakia	7,000	7,000	7,000	7,000	28,000	-
7,000	Slovenia	7,000	7,000	7,000	7,000	28,000	-
18,200	Spain	18,200	18,200	-	-	36,400	36,400
18,200	Sweden	18,200	18,200	18,200	18,200	72,800	-
18,200	Switzerland	18,200	18,200	18,200	18,200	72,800	-
11,000	Turkey	11,000	11,000	11,000	11,000	44,000	-
7,000	Ukraine	-	-	-	-	-	28,000
50,000	United Kingdom	50,000	50,000	50,000	50,000	200,000	-
554,550	Totals	478,150	491,900	472,100	371,385	1,813,535	401,915

* Belarus is contributing starting from fiscal year 2010

B. ECPGR Voluntary contributions for ECPGR Review

Participating country	2009	2010	2011	2012	Total
Switzerland	10,000				10,000
Finland	750				750
Nordic Council of Ministers			18,679		18,679
UK	1,647				1,647
Total	12,397	-	18,679	-	31,076

C. Summary of contributions

Contributions Phase VIII	1,813,535
Voluntary contributions	31,076
Total outstanding contributions Phase VIII	401,915

Table 2. ECPGR Phase VIII (2009-2012) Contributions and Expenses (in €)

	Total budget	Expenditure					Balance (estimate available for 2013)
	2009-2013	2009	2010	2011	2012 (estimate)	Total	Total
Coordinator at Bioversity International	566,400	104,670	101,668	105,806	107,350	419,494	146,906
Secretariat administrative support	215,100	20,851	35,602	41,096	56,070	153,619	61,481
Secretariat staff travel	35,000	7,605	,893	3,601	6,726	27,824	7,176
Steering Committee meetings	100,000	0	26,537	-978	58,957	84,516	15,484
Networks operations							
Support to Network activities and Report compilation, editing and layout (scientific assistance 50%)	227,300	43,884	37,760	39,637	42,556	163,837	63,463
Network Coordinating Group meetings	60,000	0	0	0	0	0	60,000
Network operations - Crop Networks	553,495	96,145	112,793	56,937	93,780	359,655	193,840
Network operations - Thematic Networks	118,910	7,011	50,950	14,818	0	72,779	46,131
Contribution to the cost of EURISCO	45,000	6,888	2,250	5,285	17,162	31,585	13,415
AEGIS project - coordination	330,985	56,291	45,374	67,278	50,065	219,008	111,977
AEGIS project - activities	129,255	2,672	33,968	69,925	-2,888	103,677	25,578
Network operations - Total	1,464,945	212,891	283,096	253,879	200,675	950,541	514,404
Contribution to the cost of Bioversity Newsletter for Europe	16,400	4,980	5,634	1,837	0	12,450	3,950
Communication and office consumables	43,750	8,515	8,838	9,042	8,088	34,483	9,267
Sub-total direct costs	2,441,595	359,511	471,267	414,283	437,866	1,682,928	758,667
Overhead (indirect support) 13% (1)	317,407	46,736	61,265	53,857	56,923	218,781	98,627
Total original budget	2,759,002	406,248	532,532	468,140	494,789	1,901,708	857,294
Cross-cutting activities (2) / ECPGR independent external review	31,076	0	19,568	0	4,491	24,059	7,016
ECPGR Phase VII carry-over (3)	139,975	63,414	24,081	40,546	0	128,041	11,934
GRAND TOTAL	2,930,053	469,662	576,181	508,686	499,280	2,053,809	876,244

(1) This includes provision of space in Bioversity International headquarters, the input and time of Bioversity International professional staff, etc.

(2) The original total budget of € 2,759,002 was increased by € 31,076 representing the additional voluntary contributions paid by Switzerland (€10,000), UK (£ 1,500), Finland (€750) and by Nordic Countries (DKK 140,000).

(3) The original total budget of € 2,759,002 was increased by € 139,975 representing the funds carried over from previous Phase, see also Table 3.

Note: The total balance of 1,848,329 reported in 2011 was incorrect due to an erroneous formula not accounting for the total expenditures for 2011. The correct remaining balance as at 31 December 2011 was 1,375,524. Remaining balance for 2012 is 876,244.

Estimated balance of Phase VIII at 31 October 2012 (in €)

Total regular contributions received for Phase VIII	1,813,535
Fund balance Phase VII as at 31 December 2008	9,109
Total contributions received for Phase VII	96,566
Voluntary contributions received Phase VIII	31,076
Total received	1,950,286
Total expenditures Phase VIII	2,053,809
Balance of Phase VIII	(103,523)

Table 3. ECPGR Phase VII (2004-2008) Expenses during Phase VIII (in €)

	Budget	Expenditure					Balance
		2009	2010	2011	2012	Total	
Scientific Assistant paid for 4 months in 2009	8,930	12,120	0	0	0	12,120	-3,190
Secretarial administrative support at 25%	39,193	6,950	11,867	13,643	0	32,461	6,732
Networks activities							
<i>In situ</i> Network publications	14,000	11,302	2,162	0		13,464	536
Inter-regional Cooperation activities in support of the Treaty	11,700	0	0	11,506		11,506	194
German funds towards the Treaty implementation	10,000	9,272	0	728		10,000	0
Network publications in print in 2009	8,000	6,044	0	0		6,044	1,956
Contribution towards EURISCO	15,000	2,342	6,410	0		8,752	6,248
Support to AEGIS project proposal preparation	8,420	8,088	871	1,722		10,681	-2,261
Sub-total Networks activities	67,120	37,048	9,443	13,956	0	60,448	6,672
ECPGR review - reallocated in 2011 to							
Contribution to PGR Secure/ECPGR Workshop				9,277			
Closure of Agreement <i>Vitis</i> Database				-995			
Sub-total ECPGR review	8,629	0	0	8,282	0	8,282	347
Total direct costs	123,872	56,118	21,311	35,881	0	113,310	10,562
Related overheads	16,103	7,295	2,770	4,665	0	14,730	1,373
GRAND TOTAL	139,975	63,413	24,081	40,546	0	128,040	11,935

Table 4. ECPGR funding status for Phase VII as at 31 October 2012 (in €)

DONOR	2004	2005	2006	2007	2008	Total
Outstanding contributions for Phase VII						
Armenia	2,350	2,350	2,350	2,350	2,350	11,750
Georgia	-	-	-	1,050	2,350	3,400
Israel	-	-	-	2,700	9,400	12,100
Malta	-	-	2,350	2,350	2,350	7,050
Total outstanding contributions	2,350	2,350	4,700	8,450	16,450	34,300
Contributions for Phase VII received in 2009-2012						Total
Azerbaijan	-	-	-	186	2,350	2,536
Israel	-	-	-	6,700	-	6,700
United Kingdom	-	-	-	-	42,500	42,500
Portugal	-	-	-	-	9,400	9,400
France	-	-	-	-	26,030	26,030
Macedonia (FYR)	-	2,350	2,350	2,350	2,350	9,400
Grand total contributions received for Phase VII	-	2,350	2,350	9,236	82,630	96,566
Carry-over funds from Phase VI (USD 55,313.35)						41,347
Phase VII cash balance (deficit) as per 2008 financial report						(32,238)
TOTAL BUDGET AVAILABLE FOR PHASE VII Carried over in Phase VIII						139,975

Table 5. Estimated expenditures for ECPGR Phase VIII (in €)

	Budget (estimated balance 2012)	Estimated expenses 2013	Balance (estimate)
Coordinator at Bioversity International	146,906	110,571	36,336
Secretariat administrative support	61,481	57,752	3,729
Secretariat staff travel	7,176	7,176	0
Steering Committee meetings	15,484	15,484	0
Networks operations			
Support to Network activities (Scientific assistant)	63,463	43,833	19,630
Network Coordinating Group meetings	60,000	0	60,000
Network operations - Crop Networks	193,840	129,766	64,074
Network operations - Thematic Networks	46,131	41,695	4,436
Contribution to the cost of EURISCO	13,415	13,415	0
AEGIS Project - coordination	111,977	50,000	61,977
AEGIS Project - activities	25,578	25,578	0
Network operations - Total	514,404	304,287	210,117
Contribution to the cost of Bioversity Newsletter for Europe	3,950	0	3,950
Communication and office consumables	9,267	9,267	0
Sub-total direct costs	758,668	504,536	254,132
Overhead (indirect support) 13%	98,627	65,590	33,037
Total original budget	857,295	570,126	287,169
Cross-cutting activities/ECPGR independent external review	7,016	0	7,016
ECPGR Phase VII carry-over	11,934	0	11,934
GRAND TOTAL	876,245	570,126	306,119

Table 6. Estimated expenses 2013 for Crop and Thematic Networks (in €)

Networks	Estimated expenses
Crop Networks	
Cereals Network	
Wheat precise stocks conservation project	4,000
<i>Avena</i> ad hoc meeting [AEGIS activities]	10,000
Forages Network	0
Oil and Protein Crops Network	
Grain Legumes WG meeting 2013 Novi Sad	17,750
Fruit Network	
Fruit Database development and maintenance	6,624
<i>Prunus</i> ad hoc meeting [AEGIS activities]	10,000
Fruit related activities	5,000
Sugar, Starch and Fibre Crops Network	
Monitoring of genetic reserve <i>Beta patula</i>	5,000
NCG meeting for project preparation	6,135
Vegetables Network	
Cucurbits develop algorithms safety-duplicates	825
Solanaceae develop algorithms safety-duplicates	4,920
Solanaceae safety-duplication	2,920
Garlic project	9,800
Umbellifers - Wild relatives project	7,840
Leafy vegetables project	7,840
Umbellifers WG meeting 2013 St Petersburg	12,227
Cucurbits safety duplication in NP	5,365
Leafy Vegetables meeting	13,520
Total Crop Networks	129,766
Thematic Networks	
<i>In situ</i> and On-farm Conservation Network	
0	
Documentation and Information Network	
Inter-regional Workshop IT	10,000
NCG meeting 2013	3,280
Contribution to EURISCO 2013	13,415
Inter-regional Cooperation Network	
Inter-regional workshops on IT implementation	15,000
Total Thematic Networks	41,695
GRAND TOTAL	171,461

Annex III. List of publications and working documents produced in Phase VIII

1. Publications	39
1.1. Publications by Bioversity/ECPGR	39
1.2. Other publications (chapters in books, papers, posters) “with an ECPGR trademark”	41
1.3. Selected publications related to and resulting from WG activities	42
2. Working documents	43
2.1. Descriptors	43
2.2. Crop-specific genebank standards	43
2.3. Other working documents and general information	44

1. Publications

Note

The list of publications below includes:

1. material published by Bioversity/ECPGR,
2. material published in external books, journals etc. "with an ECPGR trademark" (ECPGR logo, ECPGR Secretariat authors, and/or involving ECPGR funding or data sources), and
3. a selection of publications related to and resulting from WG activities

In addition, a number of relevant articles can be found in **the Bioversity Newsletter for Europe** (electronic versions available from the Bioversity publications Web site).

Many references to other related publications, provided by ECPGR members, are also available from the respective Working Groups' Web pages.

1.1. Publications by Bioversity/ECPGR

- 2012** ECPGR. 2012. Minutes of the **2nd ECPGR Executive Committee meeting**. Maccarese, Italy, 17-19 October 2011.
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- Kleijer G, Faberová I, Maggioni L, Lipman E. 2012. Report of a Working Group on **Wheat. Third Meeting**, 15-17 May 2012, Piešťany, Slovakia. Bioversity International, Rome, Italy.
- Maggioni L, Engels J, Maul E, Ortiz J, Lipman E. [2012]. Report of a Working Group on **Vitis. Second Meeting**, 18-20 September 2012, Siebeldingen, Germany. Bioversity International, Rome, Italy. (*draft online*)
- Maggioni L, Frese L, Lipman E. [2012]. Report of a Working Group on **Beta and the World Beta Network. Fourth Joint Meeting**, 20-22 June 2012, Cappelle-en-Pévèle, France. Bioversity International, Rome, Italy. (*draft online*)
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- 2011** Díez MJ, van Dooijeweert W, Lipman E. 2011. Report of a Working Group on **Cucurbits. Ad hoc Meeting**, 23-24 October 2008, Warsaw, Poland. Bioversity International, Rome, Italy.
- Díez MJ, van Dooijeweert W, Maggioni L, Lipman E. 2011. Report of a Working Group on **Cucurbits. Second Meeting**, 8-10 November 2010, Tbilisi, Georgia; Bioversity International, Rome, Italy.
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- Maggioni L, Lateur M, Balsemin E, Lipman E. 2011. Report of a Working Group on **Prunus. Eighth Meeting**, 7-9 September 2010, Forli, Italy. Bioversity International, Rome, Italy.
- Maggioni L, Veteläinen M, Willner E, Lipman E. 2011. Report of a Working Group on **Forages. Tenth Meeting**, 28-29 April 2010, Poel Island, Germany. Bioversity International, Rome, Italy.

- Maggioni L, Katsiotis A, Knüpffer H, Kleijer G, Lipman E. 2011. Report of a **Cereals Network. Second Meeting**, 21-24 April 2008, Foça, Turkey. Bioversity International, Rome, Italy.
- Pavelek M, Lipman E. 2011. Report of a Working Group on **Fibre Crops (Flax and Hemp). Second Meeting**, 7-9 July 2010, Šumperk – Velké Losiny, Czech Republic. Bioversity International, Rome, Italy.
- 2010**
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- Bas N, Pavelek M, Maggioni L, Lipman E. 2010. Report of a Working Group on **Fibre Crops (Flax and Hemp). First Meeting**, 14-16 June 2006, Wageningen, The Netherlands. Bioversity International, Rome, Italy.
- Boller B, Willner E, Marum P, Maggioni L, Lipman E. 2010. Report of a Working Group on **Forages. Ninth Meeting**, 23-25 October 2007, Piešťany, Slovakia. Bioversity International, Rome, Italy.
- ECPGR Cereals Network and ECPGR Working Group on Barley. 2010. **Pre-breeding for small grain cereals** - How to meet future challenges of food supply under a changing climate. (*concept note*).
- Frese L, Hoekstra R. [2010]. Report of a **Network Coordinating Group on Sugar, Starch and Fibre Crops. Third Meeting**, 8-9 October 2009, Quedlinburg, Germany.
- Lateur M, Maggioni L, Lipman E. 2010. Report of a Working Group on **Malus/Pyrus. Third Meeting**, 25-27 October 2006, Tbilisi, Georgia. Bioversity International, Rome, Italy.
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- Maggioni L, Lipman E, compilers. 2009. Report of a Task Force on **On-farm Conservation and Management. Third Meeting**, 2-3 October 2007, Ljubljana, Slovenia. Bioversity International, Rome, Italy.
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1.2. Other publications (chapters in books, papers, posters) “with an ECPGR trademark”

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- Engels JMM, Maggioni L. 2012. **AEGIS: a regionally based approach to PGR conservation**. In: Maxted N, Dulloo ME, Ford-Lloyd BV, Frese L, Iriondo JM, Pinheiro de Carvalho MAA, editors. *Agrobiodiversity Conservation: Securing the Diversity of Crop Wild Relatives and Landraces*. CAB International, Wallingford. pp. 321-326.
- Frese L, Nachtigall M, Enders M, Pinheiro de Carvalho MAA. 2012. ***Beta patula* Ait. genetic diversity analysis**. In: Maxted N, Dulloo ME, Ford-Lloyd BV, Frese L, Iriondo JM, Pinheiro de Carvalho MAA, editors. *Agrobiodiversity Conservation: Securing the diversity of Crop Wild Relatives and Landraces*, CAB International, Wallingford, UK. pp. 45-51.
- Kell S, Negri V, Torricelli R, Maxted N, Maggioni L, Fielder H, compilers. [2012]. **Conservation strategies for European crop wild relative and landrace diversity**. Joint PGR Secure/ECPGR workshop, 7–9 September 2011, Palanga, Lithuania. Report.
- Maxted N, Akparov ZI, Aronsson M, Asdal Å, Avagyan A, Bartha B, Benediková D, Berishvili T, Bocci R, Cop J, Curtis T, Daugstad K, Dias S, Duarte MC, Dzmitryeva S, Engels J, Fasoula DA, Ferant N, Frese L, Freudenthaler P, Hadas R, Holly L, Ibraliu A, Iriondo JM, Ivanovska S, Jinjikhadze T, Kamari G, Kell SP, Kik C, Koop L, Korpelainen H, Kristiansen K, Kyratzis A, Labokas J, Maggioni L, Magos Brehm J, Maloupa E, Martinez JJR, Mendes Moreira PMR, Musayev M, Radun M, Ralli P, Sandru D, Sarikyan K, Schierscher-Viret B, Smekalova T, Stehno Z, Stoilova T, Strajeru S, Tan A, Veteläinen M, Vögel R, Vorosvary G, Negri V. 2012. **Current and Future Threats and Opportunities Facing European Crop Wild Relative and Landrace Diversity**. In: Maxted N, Dulloo ME, Ford-Lloyd BV, Frese L, Iriondo JM, Pinheiro de Carvalho MAA, editors. *Agrobiodiversity Conservation: Securing the Diversity of Crop Wild Relatives and Landraces*. CAB International, Wallingford. pp. 333-353.
- Negri V, Maxted N, Torricelli R, Heinonen M, Veteläinen M, Dias S. 2012. **Descriptors for Web-enabled national *in situ* landrace inventories**. University of Perugia, Italy.
- 2011 Díez MJ, van Dooijeweert W, Maggioni L. 2011. **The European Cooperative Programme for Plant Genetic Resources (ECPGR) Cucurbits Working Group**. Poster presented at the EUCARPIA Genetic Resources section meeting "To Serve and Conserve", 5-7 April 2011, Wageningen, The Netherlands.
- Suso MJ, Vishnyakova M, Ramos A, Duc G, Ambrose M. 2011. **An International Survey on State of the Art of Grain Legume Management in Gene Banks**. *Journal of Agricultural Science and Technology B* 1 (2011) 975-981.
- 2010 Hintum Th. van, Begemann F, Maggioni L. 2010. **The European *ex situ* PGR Information Landscape**. In: Maurer L, Tochtermann K, editors. *Information and Communication Technologies for biodiversity conservation and agriculture*. Shaker Verlag, Aachen. pp. 155-171.
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- 2009 Clarke JB, Tobutt KR. 2009. **A standard set of accessions, microsatellites and genotypes for harmonising the fingerprinting of cherry collections for the ECPGR**. In: Socias y Company R, Espiau MT, Alonso JM, editors. *Proceedings of the Twelfth Eucarpia Symposium on Fruit Breeding and Genetics*, 20 March 2009, Zaragoza, Spain. *Acta Horticulturae* 814:615-61.
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1.3. Selected publications related to and resulting from WG activities

- 2012** Benediková D, Giovannini D. [2012]. **Review on Genetic Resources in the ECPGR Prunus Working Group.** Proceedings of the Second Balkan Symposium on Fruit Growing (II BSFG), ISHS, 5-7 September 2011, Pitesti, Romania. Acta Hort xxx (*in press*).
- van Treuren R, Coquin P, Lohwasser U. 2012. **Genetic resources collections of leafy vegetables (lettuce, spinach, chicory, artichoke, asparagus, lamb's lettuce, rhubarb and rocket salad): composition and gaps.** Genetic Resources Crop Evolution 59:981–997 (DOI 10.1007/s10722-011-9738-x).
- Vincent H, von Bothmer R, Knüpffer H, Amri A, Maxted N. Genetic gap analysis of *Hordeum* taxa. Plant Genetic Resources (*submitted 3 July 2012*).
- 2011** Germeier G. 2011. **AVEQ - A project on Avena Genetic Resources for Nutritional Quality.** Bioversity Newsletter for Europe 42:5.
- Kik C et al. 2011. Leafy vegetables GENRES project successfully completed! Bioversity Newsletter for Europe 42:12.
- Suso MJ, Vishnyakova M, Ramos Á, Duc G, Ambrose M. 2011. **An international survey on state of the art of grain legume management in gene banks.** Journal of Agricultural Science and Technology B 1:975-981.
- 2010** Dušek K, Krieg P, Dušková E. 2010. Methodology for using insect pollinators in heterogamous vegetable species, medicinal, aromatic and culinary plants grown in technical isolation. Methodology for practice. Crop Research Institute, Prague.
- [ECPGR]. 2010. **Regeneration and safety-duplication of threatened cereal and grain legume accessions.** Bioversity Newsletter for Europe 40:7.
- Katsiotis A, Branca F, Garcia P, Ladizinsky G. 2010. **Surveying and collecting Avena wild species in Sicily and Andalusia.** Bioversity Newsletter for Europe 40:7
- 2009** Clarke JB, Tobutt KR. 2009. **A standard set of accessions, microsatellites and genotypes for harmonising the fingerprinting of cherry collections for the ECPGR.** In: Socias y Company R, Espiau MT, Alonso JM, editors. Proceedings of the Twelfth Eucarpia Symposium on Fruit Breeding and Genetics, 20 March 2009, Zaragoza, Spain. Acta Horticulturae 814:615-61.
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2. Working documents

2.1. Descriptors

Vegetables

- Minimum Descriptor lists for *Cucurbita* spp., Cucumber, Melon, Watermelon
- Minimum Descriptors for Leafy vegetables: Cultivated lettuce, Wild *Lactuca* spp., Spinach, Leaf chicory, Witloof, Endive, Root chicory
- Minimum Descriptor List for *Eruca*
- Minimum Descriptor List for *Valerianella*
- Minimum descriptors for Pepino, Groundcherry and Tree Tomato (Minor Solanaceae crops)
- Minimum descriptors for characterization of carrot (*under revision and in progress*)
- Minimum descriptors for celeriac (13), celery (12), dill (7) and parsley (15) (*in progress*).

Fruit

Agreed lists of C&E pear and apple descriptors.

- List of minimum passport descriptors for all *Prunus* species
- 48 descriptors of the Organisation Internationale de la Vigne et du Vin (OIV) now available in seven languages via the European *Vitis* Database

Medicinal and Aromatic Plants

- Proposal for a MAP descriptor list (Passport, management, environment and site descriptors)
- Draft characterization and evaluation descriptors for priority genera/species
 - *Carum* spp.
 - *Hypericum perforatum* L.
 - *Melissa officinalis* L.
 - *Mentha piperita* L.
 - *Mentha spicata* L.
 - *Origanum vulgare* L.
 - *Salvia officinalis* L.
 - *Thymus serpyllum* L.
 - *Thymus vulgaris* L.

In situ

- Descriptors for Web-enabled national *in situ* landrace inventories
- Development of a descriptor list for *In situ* management

2.2. Crop-specific genebank standards

Cereals

- **Avena** (AEGIS model crop): Draft quality minimum standards for routine operations developed; number of issues need to be resolved. Ad hoc meeting to proceed with process had to be postponed.
- **Barley**: Development of crop-specific minimum standards planned for May 2012.
- **Wheat**: Protocols for specific routine management of wild species planned by mid-2012. No need for crop-specific standards in addition to FAO standards.

Vegetables

- **Allium** (AEGIS model crop): Recommendations for field maintenance of shallot and garlic; Protocols for *in vitro* and cryopreservation of garlic. Phytosanitary standards adopted.
- **Brassica** (AEGIS model crop): Draft minimum standards prepared.
- **Leafy Vegetables**: Minimum standards are planned to be developed on basis of inventory. Progress hampered by cancelled meeting.
- **Solanaceae**: Minimum protocols for seed regeneration and storage. No need for more stringent standards.

- **Umbellifer Crops:** Proposal for crop-specific minimum standards made; final agreement by WG outstanding (to be agreed at next meeting, June 2013). Regeneration; long-term conservation.

Sugar, Starch and Fibre Crops

- **Beta:** Guidelines for multiplication of *Beta nana* need to be developed. Proposal made to adopt the FAO standards for orthodox seeds as well as the crop-specific seed increase protocol
- **Medicinal and Aromatic Plants:** Protocol for use of insects for pollination during regeneration in technical isolation.

Forages

Forages: Minimum standards for regeneration

Fruit

- **Malus/Pyrus:** Agreement to use FAO standards for field genebanks as basis for deciding whether any crop-specific standards are needed.
- **Prunus (AEGIS model crop):** Minimum technical standards prepared.
- **Vitis:** FAO standards for non-orthodox seeds and clonally propagate plants agreeable with a few additions.

2.3. Other working documents and general information

Vegetables

- Survey of wild brassica collections
- Status of Solanaceae seed stock management in European countries
- General guidelines for regeneration, processing and storage of cucurbit species
- Table summarizing the current level of safety-duplication of Cucurbit collections in Europe

Forages

- Survey of storage conditions and status of safety-duplication per country

Fruit

National management models for fruit genebanks (Germany and Switzerland)