

ECPGR *In situ* Conservation WG Report 2014-2015

The ***In situ* Working Group** consisted of 83 members: Nigel Maxted, (United Kingdom – WG Chair); Alban Ibraliu (Albania), Alvina Avagyan (Armenia), Paul Freudenthaler (Austria), Sylvia Vogl (Austria), Afig Mammadov (Azerbaijan), Aydin Asgarov (Azerbaijan), Safiya Dzmitryieva (Belarus), Sergey Savchuk (Belarus), Stanislau Grib (Belarus), Marina Antić (Bosnia and Herzegovina), Sead Vojnikovic (Bosnia and Herzegovina), Radoslav Gašić (Bosnia and Herzegovina), Željka Stojičić (Bosnia and Herzegovina), Nada Šumatić (Bosnia and Herzegovina), Sladana Petronić (Bosnia and Herzegovina), Danijela Petrović (Bosnia and Herzegovina), Katya Uzundjalieva (Bulgaria), Tatjana Klepo (Croatia), Barbara Sladonja (Croatia), Frane Strikić (Croatia), Angelos Kyratzis (Cyprus), Vojtěch Holubec (Czech Republic), Tomáš Vymyslický (Czech Republic), Lars Henrik Jacobsen (Denmark), Rene Aavola (Estonia), Helena Korpelainen (Finland), Heli Fitzgerald (Finland), Tamar Jinjikhadze (Georgia), Lothar Frese (Germany), Sarah Sensen (Germany), Rudolf Vögel (Germany), Matthias Ziegler (Germany), Parthenopi Ralli (Greece), Ottó Szalkovszki (Hungary), Erzsébet Peti (Hungary), Tom Curtis (Ireland), Alon Singer (Israel), Valeria Negri (Italy), Pietro Fusani (Italy), Giovanni G. Vendramin (Italy), Agnese Gailite (Latvia), Juozas Labokas (Lithuania), Birutė Karpavičienė (Lithuania), Stefan Lazu (Moldova), Danijela Stesevic (Montenegro), Rob van Treuren (Netherlands), Denise Fu Dostatny (Poland), Waldemar Buchwald (Poland), Anna Forycka (Poland), Marcin Zaczyński (Poland), Miguel Angelo Carvalho (Portugal), Joana Magos Brehm (Portugal), Humberto Nóbrega (Portugal), Benvindo Martins Maças (Portugal), Susana Maria Fontina (Portugal), David Horta Lopes (Portugal), Marius Dan Şandru (Romania), Mihail Coman (Romania), Crăişor Mazilu (Romania), Silvia Străjeru (Romania), Tamara Smekalova (Russian Federation), Sofija Petrovic (Serbia), Sreten Terzić (Serbia), Pavol Hauptvogel (Slovakia), Andreja Čerenak (Slovenia), Darinka Koron (Slovenia), José María Iriondo Alegría (Spain), Arnaldo Santos Guerra (Spain), Mora Aronsson (Sweden), Anna Palmé (Sweden), Kjell-Åke Lundblad (Sweden), Jens Weibull (Sweden), Sibyl Rometsch (Switzerland), Yvonne Lötscher (Switzerland), Christian Eigenmann (Switzerland), Christina Kägi (Switzerland), Markus Hardegger (Switzerland), Abdullah Inal (Turkey), Necla Tas (Turkey), Roman L. Boguslavskyi (Ukraine), Nigel Maxted (United Kingdom), Julian Hoskings (United Kingdom), Shelagh Kell (United Kingdom).

1. Achievements in the field of *In Situ* or CWR conservation in the period 2014–2015.

- a. **PGR Secure support** – Activities of the Network were carried out within the framework of the EC FP7-funded PGR Secure project (www.pgrsecure.org) which concluded in August 2014. The project has made significant progress in the development of national crop wild relative (CWR) conservation strategies in Albania, Cyprus, the Czech Republic, Finland, Italy, Norway, Spain and the United Kingdom. CWR conservation strategy development is also underway in Belarus, Bulgaria, Greece and Turkey as a direct result of training and technical support provided by the PGR Secure project. Independently, Sweden has taken concrete steps in preparing a national conservation strategy for CWR following the training provided in the joint PGR Secure/ECPGR workshop in 2011 (www.pgrsecure.bham.ac.uk/palanga_workshop). The PGR Secure project provided a helpdesk (online and via direct email/Skype contact) (www.pgrsecure.org/helpdesk) and a specific PGR Secure website for Spanish CWR was created (<http://pgrsecurSpain.weebly.com/index.html>). The content of the PGR Secure helpdesk web pages include conservation planning aids, data sources, Red List information, descriptors for information management, as well as useful publications, networks, websites and resources associated with past conferences and workshops. The project also provided one-to-one technical assistance through in-country visits to Albania, Bulgaria, Cyprus, Czech Rep., Finland, Italy, Portugal, Norway, Spain and United Kingdom and the provision of researcher support to *In Situ* WG members.

- b. European CWR conservation review – A review of progress in national CWR conservation in each European country was made available online: (www.pgrsecure.bham.ac.uk/sites/default/files/documents/helpdesk/Progress_national_CWR_and_LR_conservation_Europe.pdf). The review was originally based on results of a horizon scanning exercise initiated at the Symposium ‘Towards the establishment of genetic reserves for crop wild relatives and landraces in Europe’ in September 2010 (see <http://www3.uma.pt/isoplexis/aegro.ecpgr.symp/>) and is updated on a regular basis following communications with national programmes.
- c. Journal *Crop wild relative* – Issue 10 was published in February 2015 with PGR Secure project funding (www.pgrsecure.bham.ac.uk/sites/default/files/documents/newsletters/CWR_Issue_10.pdf) and includes contributions from many ECPGR WG members. *Crop wild relative* serves to highlight the importance of CWR as critical resources for the improvement of crops. It provides a medium to publicize information about the conservation and use of CWR, including updates on CWR conservation project activities, national CWR conservation strategies, and the use of CWR in crop improvement.
- d. PGR Secure conference – The conference ‘*ENHANCED GENEPOOL UTILIZATION – Capturing wild relative and landrace diversity for crop improvement*’ was held in Cambridge, United Kingdom, 16–20 June 2014. The conference comprised twelve sessions organized within four themes: 1) characterization techniques, 2) conservation strategies, 3) facilitating CWR and LR use, and 4) informatics development. Fifty-nine oral presentations and 56 posters were shared under these themes. The conference was attended by 140 delegates (Figure 1) from 42 countries (including the majority of European countries) and many *In Situ* WG members were able to attend and present their CWR research.



Figure 1. The 140 delegates of the ‘*Enhanced GenePool Utilization*’ international conference outside Churchill college, Cambridge (Photo: Nora Capozio, Bioversity International).

- e. Nordic CWR project – The Nordic CWR project started in 2015. Led by NordGen, with partners from five Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) the project received funding from the Nordic Council of ministers for a two year project: ‘Ecosystem services: Genetic resources and crop wild relatives’. The project will work on the Nordic level to strengthen the efforts on conservation and use of crop wild relatives. The aim is to establish a

Nordic network for genetic resources that provide provisioning ecosystem services and policy inputs; to obtain Nordic synergy on CWR conservation with a focus on *in situ* conservation and to promote interactions between *in situ* and *ex situ* conservation of crop wild relatives. Three in-depth studies will be conducted within the project. The focus of the in-depth studies will be on coordination of CWR conservation in the Nordic countries and development of a common Nordic conservation action plan. The project has held two meetings/workshops during 2015, (i) *In situ* / CWR seminar in Østre Bolærne, Norway, 26-28 May 2015, and (ii) Plant genetic resources for food security and ecosystem services - workshop, Stockholm, Sweden, 18-19 November 2015.

- f. Bulgarian CWR Project – Assoc. Prof. Katya Uzundzhaliyeva reports on the ‘*Crop Wild Relatives - inventorization and gathering information for distribution, conservation and use with the view of future politics*’ Project, financed by the Ministry of Environment. The main goal of the project was to establish a basis for the development of a Bulgarian National Strategy for CWR conservation. Under that project several expeditions were made to survey and collect CWR in nature as well as developing a priority checklist and inventory, with ancillary data held in the database Bulgarian CWR.
- g. PGR Secure conference proceedings – The PGR Secure conference ‘*ENHANCED GENEPOOL UTILIZATION – Capturing wild relative and landrace diversity for crop improvement*’ proceedings containing summaries of the presented papers will be published in the spring of 2016 and made freely available to all conference participants.
- h. Publications – produced by *In Situ* WG members in 2014/15 include:

Books

- Redden, R., Yadav, S.S., Maxted, N., Dulloo, M.E., Guarino, L. & Smith, P. (Eds.), (2015). *Crop Wild Relatives and Climate Change*, John Wiley & Sons, Inc., Hoboken, USA. ISBN 978-1-118-85433-4.
- Thormann, I., Parra-Quijano, M., Endresen, D.T.F., Rubio-Teso, M.L., Iriando, M.J. & Maxted, N., (2014). Predictive characterization of crop wild relatives and landraces. Technical guidelines version 1. Bioversity International, Rome, Italy. Available online at: [http://www.bioversityinternational.org/index.php?id=244&tx_news_pi1\[news\]=4967&chash=7cd3c6c2b8360927b83fa6ef7cc28d99](http://www.bioversityinternational.org/index.php?id=244&tx_news_pi1[news]=4967&chash=7cd3c6c2b8360927b83fa6ef7cc28d99)
- Parra-Quijano, M., Torres, E., Iriando, J.M. & López, F. (2014). *Capfitogen tools. Programme to Strengthen National Plant Genetic Resource Capacities in Latin America*. FAO, Rome, 138 pp.

Peer Reviewed Articles

- Fielder, H., Smith, C., Ford-Lloyd, B. & Maxted, N., (2016). Enhancing the conservation of crop wild relatives in Scotland. *Journal for Nature Conservation*, 29, 51–61.
- Holubec V., Smekalova T. & L. Leisova-Svobodova L., (2015). Morphological and molecular evaluation of the Far East fruit genetic resources of *Lonicera caerulea* L. *Proceedings on Applied Botany, Genetics and Breeding*, 176(3): 325-335. ISSN: 0202-3628.
- Bagmet L.V. & Bojko A.P., (2014). Wild Relatives of Fruit Crops in western Transcaucasia. *Proceedings on Applied Botany, Genetics and Breeding*, 175(1): 50-55.

- Smekalova T., N., Zhuk m.A., Kovaleva O.N., Bagmet L.V., KavaHara T., Sasanuma T. & Sato K., (2014). Barley, wheat and *Aegilops* genetic resources on the territory of Russian Caucasus by materials of mission 2010). *Proceedings on Applied Botany, Genetics and Breeding*, 175(1): 68-71.
- Miftakhova, X. & Smekalova T.N., (2014).Taxonomical analysis of Crop Wild Relatives in Flora of Bashkortostan Republic. *Potential of Modern Science*, 4: 37-42.
- Jiang, J.F., Kell, S., Fan, X.C., Zhang, Y., Wei, W., Kang, D.M., Maxted, N., Ford-Lloyd, B. & Liu, C.H., (2015). The wild relatives of grape in China: diversity, conservation gaps and impact of climate change. *Agriculture, Ecosystems and Environment*, 210: 50–58, <http://dx.doi.org/10.1016/j.agee.2015.03.021>.
- Kell, S., Qin, H., Chen, B., Ford-Lloyd, B.V., Wei, W., Kang, D. & Maxted, N., (2015). China's crop wild relatives: diversity for agriculture and food security. *Agriculture, Ecosystems and Environment* 209: 138–154, <http://dx.doi.org/10.1016/j.agee.2015.02.012>.
- Jarvis, S., Fielder, H., Brotherton, P., Hopkins, J.J., Maxted, N. & Smart, S., (2015). Distribution of crop wild relatives of conservation priority in the UK landscape. *Biological Conservation*, 191: 444–451.
- Fielder, H., Brotherton, P., Hosking, J., Hopkins, J.J., Ford-Lloyd, B.V. & Maxted, N., (2015). Enhancing the conservation of crop wild relatives in England. *PLOS ONE* 10(6): e0130804. doi:10.1371/journal.pone.0130804
- Castañeda-Álvarez, N.P., de Haan, S., Juárez, H., Houry, C.K., Achicanoy, H.A, Sosa, C.C., Bernau, V., Salas, A., Heider, B., Simon, R., Maxted, N. & Spooner, D.M., (2015) *Ex situ* conservation priorities for the wild relatives of potato (*Solanum* L. section *Petota*). *PLOS ONE* 10.1371/journal.pone.0122599.
- Landucci, F., Panella, L., Lucarini, D., Gigante, D., Donnini, D., Kell, S.P., Maxted N., Venanzoni, R. & Negri, V., (2014) A prioritized inventory of crop wild relatives and wild harvested plants of Italy. *Crop Science*, 54(4): 1628-1644.
- Phillips, J., Kyratzis, A., Christoudoulou, C., Kell, S. & Maxted, N., (2014). Development of a national crop wild relative conservation strategy for Cyprus. *Genetic Resources and Crop Evolution*, 61: 817-827.
- Atlagić, J. & Terzić, S., (2015). The challenges of maintaining a collection of wild sunflower (*Helianthus*) species. *Genetic Resources and Crop Evolution* DOI 10.1007/s10722-015-0313-8.

Chapters in Edited Books

- Holubec V., Smekalova T., Paprštein F., Štočková L., & Řezníček V., (2015). Potential of Minor Fruit Crop Wild Relatives (CWR) as New Crops in Breeding for Market Diversification. In: R. Redden, S. S. Yadav, N. Maxted, M. E. Dulloo, L. Guarino, P. Smith. *Crop Wild Relatives and Climate Change*. John Wiley & Sons, Inc. pp. 290-315.
- Maxted, N., Avagyan, A., Frese, L., Iriondo, J.M., Kell, S.P. Magos Brehm, J., Singer, A. & Dulloo, M.E., (2015). Conservation Planning for Crop Wild Relative Diversity. In: Redden, R., Yadav, S.S., Maxted, N., Dulloo, M.E., Guarino, L. & Smith, P. (Eds.), *Crop Wild Relatives and Climate Change*, Pp. 88-107. John Wiley & Sons, Inc., Hoboken, USA.
- Maxted, N., Kell, S. and Magos Brehm, J., (2014). Crop wild relatives and climate change. In: Jackson. M., Ford-Lloyd, B.V. and Parry, M.L. (eds.), *Plant Genetic Resources and Climate Change*, CAB International, Wallingford, UK, pp. 114–136.
- Stolton, S., Dudley, N., Avcioglu Çokçalışkan, B., Hunter, D., Ivanić, K.-Z., Kanga, E., Kettunen, M., Kumagai, Y., Maxted, N., Senior, J., Wong, M., Keenleyside, K., Mulrooney, D., Waithaka, J., (2014). Values and Benefits of Protected Areas. In: Worboys, G.L., Lockwood, M., Kothari,

A., Feary, S. & Pulsford, I. (eds) *Protected Area Governance and Management*. pp 146-168. ANU E-Press, Canberra, Australia.

- Maxted, N. and Kell, S., (2014). Workshop report: A role for botanic gardens in crop wild relative conservation. In: Krigas, N., Tsoktouridis, G., Cook, C.-M., Mylona, P. and Maloupa, E. (eds.), *European Botanic Gardens in a Changing World: Insights into Eurogard VI*. Balkan Botanic Garden of Kroussia and Botanic Gardens Conservation International. Pp. 127–136. www.botanicgardens.eu/eurogard/eurogard6/eurogardVI.pdf
- Atlagić, J. & Terzić, S., (2014). Sunflower Genetic Resources – Interspecific Hybridization and Cytogenetics in Prebreeding. In: Arribas, J.I. (Ed.), *Sunflowers: Growth and Development, Environmental Influences and Pests/Diseases*, Pp. 95-130. Nova Science Publishers. New York, USA.

Official Report

- Maxted, N., Avagyan, A. Frese, L., Iriondo, J.M., Magos Brehm, J., Singer, A. and Kell, S.P., (2015). *ECPGR Concept for in situ conservation of crop wild relatives in Europe*. Wild Species Conservation in Genetic Reserves Working Group, European Cooperative Programme for Plant Genetic Resources, Rome, Italy. www.ecpgr.cgiar.org/fileadmin/templates/ecpgr.org/upload/WG_UPLOADS_PHASE_IX/WILD_SPECIES/Concept_for_in_situ_conservation_of_CWR_in_Europe.pdf
- Maxted, N., Kell, S. & Magos Brehm, J., (2014). *National Level Conservation and Use of Crop Wild Relatives Draft Technical Guidelines*. Food and Agriculture Organization of the United Nations, Rome, Italy. 14 pp. <http://www.fao.org/3/a-mm542e.pdf>.
- Maxted, N., Kell, S. & Magos Brehm, J., (2014). *Global Networking on in situ Conservation and on-farm Management of Plant Genetic Resources for Food and Agriculture*. Food and Agriculture Organization of the United Nations, Rome, Italy. 14 pp. <http://www.fao.org/3/a-mm537e.pdf>.

i. CWR Red Listing –

- IUCN Red Listing assessment of European CWR taxa.
- Conversion of regional to global IUCN Red Listing assessment of European CWR taxa.
- Review of IUCN Red Listing assessments for *Avena* spp., *Cinnamomum* spp., *Lamprachaenium* spp., *Coffea* spp., *Dioscorea* spp., *Costus* spp., etc.
- Participation in the development of climate change modelling procedures being produced by the IUCN SSC Climate Change Specialist Group and contributing with regard to CWR (and LR) to the Best Practice Guideline "Responding to Climate Change" produced by the IUCN World Commission on Protected Areas (WCPA).
- Shelagh Kell was designated by the IUCN Species Programme as the CWR Red List Authority Coordinator (the authority being the CWRSRG).

h. Prioritised inventories

- Landucci F., Panella L., Lucarini D., Gigante D., Donnini D., Venanzoni R. & Negri V., (2014). *Italian Prioritized Inventories of Crop Wild Relatives*. Available at <http://vnr.unipg.it/PGRSecure/start.html/>

2. Develop a Workplan for each new Phase in line with the ECPGR objectives for the respective theme, in consultation with WG experts.

- a. In Situ Task Force – As reported in the last *In Situ* WG report, the ECPGR Secretariat established a Task Force composed of A. Avagyan, L. Frese, J.M. Iriondo, J. Magos Brehm, A. Singer, S.P. Kell

and led by N. Maxted to debate and propose a concept for *in situ* conservation of CWR in Europe which would act as a guide for EU and national policy development and to act as a blueprint to drive concerted actions throughout the region. The first draft was submitted to the ECPGR Chair in 2013 and following feedback a final document was prepared (Maxted *et al.*, 2015 – http://www.ecpgr.cgiar.org/fileadmin/templates/ecpgr.org/upload/WG_UPLOADS_PHASE_IX/WILD_SPECIES/Concept_for_in_situ_conservation_of_CWR_in_Europe.pdf). The final concept was endorsed by the ECPGR Steering Committee in March 2015. The concept is drawn from a comprehensive background document (www.pgrsecure.org/documents/Background_document.pdf) which details the imperative for CWR conservation in Europe, the national, regional and integrated approaches to their conservation, and the requirement for a new policy paradigm to secure their genetic diversity. The document also addresses a number of back-stopping elements, including a) methods of diversity and gap analysis to identify priority populations for conservation action; b) population management inside and outside protected areas; c) a proposal for integrating *in situ* and *ex situ* conservation and the sustainable use of CWR genetic diversity within the ECPGR; d) options to promote integration between PGRFA and nature conservation communities; and e) options to promote awareness of the value of CWR diversity and for raising funding for their conservation in Europe.

- b. Strategy for European CWR Conservation – Allied to the concept a regional inventory of priority CWR taxa and populations requiring active conservation will become part of the strategy for the conservation of Europe’s CWR diversity. Initial results highlight some 200 species that are an immediate priority for conservation planning based on a) their relationship to crops of high economic and food security importance in Europe, and b) their relative threat status (Kell *et al.*, in prep.). The responsibility for conserving these priority species is Europe-wide with some 30 countries containing native, wild populations of 20 or more species. Initial results of gap analyses reveal that only around half of these priority species occur within protected areas, and alarmingly that less than half are represented in gene bank collections. Further, approximately half of the species found in gene bank collections are represented by only eight accessions or less. The full European strategy document will be published online and results used to inform the development and implementation of an integrated CWR conservation strategy for Europe.
3. Provide information to the WG members on ECPGR events and mode of operation on a need or request basis.

This obligation was met as opportunities arose and all original WG members were involved in the Palanga workshop in 2011 where access to expertise was reviewed.
 4. Provide advice to other WGs upon request or on a need basis on technical WG related aspects that are also of interest or importance to other WGs.

The coordinator was invited to provide advice to the Beta, Forage and Medicinal Plant WG and joined them in applications for funding. The Beta and Forage applications were successful in 2015 and Nigel Maxted attended the Beta (with Jose Iriondo) and Forage project meetings and provided advice on *in situ* CWR conservation.
 5. Orchestrate the knowhow available in the respective pool of experts to resolve specific technical issues that might evolve as part of the operation of the WG.

The EC FP7-funded PGR Secure project (www.pgrsecure.org) was able to assist several members of the WG from various countries develop national conservation strategies as discussed above. This has been extended by the successful application for ECPGR funding “Promoting implementation of national and regional crop wild relative (CWR) conservation strategies through sharing of

knowledge and experience to create an integrated European strategy for CWR conservation” led by Juozas Labokas and Nigel Maxted which will hold a workshop in Vilnius in September 2016.

6. Initiate and coordinate the preparation of project ideas and proposals for funding from the competitive ECPGR funding scheme and/or from other sources. The WG Chair will also be responsible for the timely submission of the proposals to ExCo.

- Juozas Labokas and Nigel Maxted submitted an application to the competitive ECPGR funding scheme in 2015 and were successful. The project will lead to a selected *In Situ* Group meeting in Vilnius, Lithuania in September 2016 to move forward *in situ* CWR conservation in Europe.
- Parthenopi Ralli and Pavol Hauptvogel submitted and implemented a project entitled "Exploration of cultivated species gene pool for the advancement and improvement of important European crops agronomical characteristics". It was a Bilateral Scientific & Technological Cooperation project between Greece (Hellenic Agricultural Organization–DEMETER, Institute of Breeding and Plant Genetic Resources) and Slovakia (Plant Production Research Center Piešťany) funded by national and EU resources. The project established cooperation between the two countries for the conservation of plant genetic resources *in situ* and *ex situ* and the exploration of small-scale applications for *in situ* and On farm conservation, the implementation of the appropriate methodology for the monitoring of demographic parameters of some target–species of high priority and the development of an effective framework for sustainable protection.
- Lothar Frese, Nikolai Friesen and Matthias Zander submitted the project proposal “Genetic reserves for wild celery species (*Apium* and *Helosciadium*) as component of a network of genetic reserves in Germany (GE-Sell)”. The Federal Office for Agriculture and Food (BLE) funded the 4-years-project. It aims at the establishment of 45 species-specific genetic reserves.
- DG AGRI of the European Commission funded the “Preparatory action on EU plant and animal genetic resources” which was coordinated by consultants with the help of experts. The project started in July 2014 and aimed to create an overview of actors, networks, activities and issues regarding conservation and sustainable use of GR in Europe. A total of seven workshops are planned during the period June 2015 – March 2016. Each workshop is dedicated to specific topics/issues linked to a specific regional context and/or covering sectorial or methodological issues in the field of genetic resources. The outcomes of the workshops should provide recommendations concerning approaches and solutions applicable for the conservation and sustainable use of GR, reflecting the objectives and themes of the preparatory action. The first workshop in June 2015 in Brussels addressing “Better integration of ex situ and in situ approaches towards conservation and use of GR at national and EU level: from complementarity to synergy” and another recent workshop in December 2015 in Barcelona addressed “The impact of climate change on the conservation and utilisation of crop wild relatives in Europe”. The project will culminate in a large conference in Brussels in 2016. More information on the objectives of the study can be found on the study website: <http://www.geneticresources.eu>.
- Bioersity, Nigel Maxted and *In Situ* Group members submitted an application for H2020 funding SFS7B AgriDiverse, but the project was unsuccessful.
- CGN submitted an application (including Nigel Maxted) for H2020 funding SFS7B PGR Gold, but the project was unsuccessful.

7. Coordinate ECPGR related activities that fall under the responsibility of the respective WG.

This goal was achieved as required.

8. Contribute to the relevant sections of the ECPGR annual reports and reports to the Steering Committee when prompted by the Secretariat, providing accounts on progress made, including an assessment of what has and has not been achieved, identifying the constraints in reaching the planned objectives.

Contributions were made as requested.

9. National achievements

Czech Republic and Norway:

- Vojtech Holubec (CZE) Mortem Rasmussen (NOR) and colleagues report a new project NATFRUIT (2015-2017) focusing on the Conservation and breeding potential of native fruits in the Czech Republic and Norway. There are some similarities in flora in CZE Krkonose Mts which is regarded as an island of Nordic flora with an occurrence of glacial relics of small fruits *Rubus chamaemorus* and *Empetrum nigrum*, *E. hermaphroditum*. *Sorbus sudetica*, *Rubus chamaemorus* and *Ribes petraeum* belong to the critically endangered species in Czech flora. The project has identified over 400 Czech and Norway wild populations of *Rubus chamaemorus*, *Ribes petraeum*, *Rubus idaeus*, plus Krkonose endemic *Sorbus sudetica* and sampled for DNA analysis, *in vitro* propagation and phenotyping. The samples will be compared with analogic materials from Norway to assess their divergence following postglacial separation. The needs for conservation actions *in situ* and *ex situ* will be assessed.

Italy:

- V. Negri (University of Perugia, UNIPG) in collaboration with ISPRA (the national agency implementing the Italian Ministry of Environment decisions) prepared a database containing information on Italian CWR of the crops listed in Annex 2 of the International Treaty. The database is available from: http://193.206.192.106/portolino/home_it/dati.php searching by taxon.

Germany:

- Establishment of a Genebank for Crop Wild Relatives in Germany. On a nationwide basis, the collection of seeds from indigenous wild species with a use value for humans is coordinated by four botanical gardens. Approximately 170 wild species from four larger regions of Germany in the northwest, northeast, southwest and southeast, and therefore from differing natural habitats, were sampled. Species diversity within numerous different wild species was ensured (<http://www.genbank-wel.uni-osnabrueck.de/>).
- Participation in the EU preparatory action workshop “the impact of climate change on the conservation and utilization of CWR in Europe”.
- The project „identification and conservation of historical old grassland“ started 2014 in Germany. One of the project aims is the establishment of genetic reserves for the identified grassland sites. The Federal Office for Agriculture and Food (BLE) funds the project.
- Germany has been working on the establishment of a genetic reserve for the European wild grapevine population on a Rhine island in the south of Germany.
- To support the capacity building of genetic reserves after the project phase and especially to establish its role as a national coordinator for genetic reserves, IBV of BLE has provided a cooperation agreement for the establishment of genetic reserves of *Apium* and grassland to the project partners.
- Germany is working on a concept for genetic reserves. First elements are described in the information system on genetic resources: <http://www.genres.de/de/kultur-und-wildpflanzen/erhaltung/in-situ-erhaltung/netzwerk-genetischer-erhaltungsgebiete-in-deutschland/>

Slovenia:

- Staff from the Slovenian Plant Gene Bank within the Agricultural Institute of Slovenia in 2015 *in situ* mapped, described and characterized 2 populations of raspberries, 2 populations of wild strawberries, 2 populations of rosehip and 2 populations of dogwood. In addition 88 populations of bilberries were mapped in previous years across Slovenia and are being *in situ* monitored/conserved. Representatives from populations described in 2015 were transferred to our experimental orchard for further characterisation and *ex situ* preservation. In addition plants of raspberries, black currant and red currant, found in nature were transferred to the experimental orchard for characterisation and *ex situ* preservation.

Russia:

- The II Scientific Conference 'Problems Of Crop Evolution And Systematics' (dedicated to the 125th birthday of E.N. Sinskaya) was held in St. Petersburg, October 9-10, 2014. The main subjects covered were: (a) Systematics of cultivated plants and their wild relatives, Crops evolution and origin, (b) Ecological and geographical aspects of cultivated plants and their wild relatives, (c) Plant genetic resources conservation problems and (d) Population variability of cultivated plants and their wild relatives.

Annex 1. Enhancing Crop Genepool Use.

Part I Breeders' Use of Exotic Germplasm

- 1 Using Phenomics and Genomics to Unlock Landrace and Wild Relative Diversity for Crop Improvement
B. Vosman, K. Pelgrom, G. Sharma, R. Voorrips, C. Broekgaarden, J. Pritchard, S. May, S. Adobor, M. Castellanos-Uribe, M. van Kaauwen, R. Finkers, B. Janssen, W.T. van Workum and B.V. Ford-Lloyd
- 2 Pre-domesticating Wild Relatives as New Sources of Novel Genetic Diversity
D. Falk
- 3 Unravelling Quinoa Domestication with Wild Ancestors
D. Bertero and A. Alercia
- 4 Screening Wild *Vigna* Species and Cowpea (*Vigna unguiculata*) Landraces for Sources of Resistance to *Striga gesnerioides*
O. Oyatomi, C. Fatokun, O. Boukar, M. Abberton and C. Ilori
- 5 Wild *Lactuca saligna*: A Rich Source of Variation for Lettuce Breeding
A. Lebeda, E. Krůstková, M. Kitner, B. Mieslerová and D.A. Pink
- 6 Capturing Wild Relative and Landrace Diversity for Crop Improvement Using a New Selection Tool to Exploit Genetic Resources in Durum Wheat (*Triticum durum* Desf.)
D. Pignone, D. De Paola, N. Rapanà and M. Janni

Part II Improving Access to PGRFA

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