



European crop wild relative diversity
assessment and conservation forum



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Crop wild relative

Issue 5 October 2005



Includes the PGR Forum CD-ROM

Conserving plant genetic resources

for use now and in the future



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Editorial

Issue 5 of *Crop wild relative* is the final issue to be published during the lifetime of the PGR Forum project, which ended on October 31st 2005. This issue is dedicated to providing a summary of the First International Conference on Crop Wild Relative Conservation and Use, held in Agrigento, Sicily, Italy, 14-17 September 2005 (pages 4-10), introducing the newly established IUCN/SSC Crop Wild Relative Specialist Group (page 10), the draft Global Strategy for Crop Wild Relative Conservation and Use (page 11), summarising the achievements of PGR Forum, and looking to the future for collaborative efforts in CWR conservation and use (page 12).

The First International Conference on CWR Conservation and Use, incorporating the PGR Forum Final Dissemination Conference was an enormous success and a landmark in PGR conservation and use. The Conference was attended by 157 delegates from 45 countries. The 45 oral papers and 65 posters presented, reflect the huge interest and breadth of work being undertaken in the field of CWR conservation and use. Nothing but positive feedback was received by the Conference organisers, and it is clear that this event was much needed. The Conference is a milestone in the conservation and sustainable use of CWR, not least for the fact that it provided a sign-post to conservationists and policy-makers worldwide that CWR are vital resources that must be conserved, and that action is needed now. Importantly, it also brought together a wide range of experts and user groups into a forum in which they had not previously had an opportunity to meet.

A major outcome of the Conference is the draft Global Strategy for Crop Wild Relative Conservation and Use, which sets out practical steps that can be taken by nations to meet its targets (see page 11 for further information).

In addition to launching and publicising PGR Forum's products, including the Crop Wild Relative Information System (CWRIS - <http://cwr.is.ecpgr.org>), the Conference provided an opportunity to introduce the new IUCN/SSC Crop Wild Relative Specialist Group (CWRSG) (see page 10 for details).

As readers will see (page 12), PGR Forum has been a hugely successful project, which has resulted in a number of exciting innovations, many products and publications, and a large dose of enthusiasm for CWR conservation and use from a group of committed individuals. As Dr Kwesi Atta-Krah, Deputy Director General of IPGRI noted in his Conference opening address: *"while this conference is intended to mark the end of a project (PGR Forum), I do not see it so much as the end of a phase, but rather as the beginning of a new phase of realism and sustainable action for CWR"*. He is right; the work is only just beginning, but new initiatives are already underway or emerging to continue with the important task of ensuring the effective conservation and sustainable use of CWR.

Readers will be pleased to know that *Crop wild relative* will continue to be published under the auspices of the ECP/GR and CWRSG. A call for contributions to the next issue will be circulated in due course.

We would like to extend a big thank you to all those who have been involved in and supported the PGR Forum project over the past three years, without whom the project could not have been such a great success. Names of all involved can be found on the PGR Forum web site: www.pgrforum.org.

Thank you!



Shelagh Kell

157 delegates from 45 countries attended the First International Conference on Crop Wild Relative Conservation and Use in Agrigento, Sicily, Italy, 14-17 September 2005

The First International Conference on Crop Wild Relative Conservation and use: **setting the scene for global action on conservation and sustainable use of CWR**

Agrigento, Sicily, Italy, 14-17 September 2005

Shelagh Kell¹, Maria Scholten¹ and Damiano Avanzato²

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The First International Conference on Crop Wild Relative Conservation and Use brought together the international community for the first time to address the current status and future of crop wild relatives (CWR) as a vital resource for improving agricultural production, increasing food security, and sustaining the environment. The Conference represents a landmark in PGR conservation, highlighting CWR as critical but neglected resources. The specific objectives of the Conference were to:

- Promote the importance of wild plant species of socio-economic value to the international community
- Review the establishment of CWR inventories and establish a baseline for their conservation assessment
- Assess procedures for establishing conservation priorities for CWR
- Review the current status of information access and management for CWR
- Evaluate methodologies for *in situ* and *ex situ* CWR conservation
- Explore ways of strengthening CWR conservation and use through international and inter-agency collaboration
- Disseminate PGR Forum products to the European and global PGR community, and discuss their wider application and continued use.

The Conference was held in Agrigento in the south of Sicily. Italy was an appropriate country in which to stage this first CWR Conference, having the second highest number of CWR species in Europe, with 5123 species - 30% of European CWR. Sicily alone contains 1889 CWR species, 36 of which are endemic, and represents the many islands around the world that exhibit high levels of species diversity and endemism, and which may harbour important plant genetic resources found nowhere else on the planet.

Participation

One hundred and fifty-seven delegates from 45 countries attended the conference, confirming the international scope of this first CWR Conference: Albania, Armenia, Australia, Azerbaijan, Belgium, Benin, Bulgaria, Canada, Colombia, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, India, Iran, Israel, Italy, Latvia, Lithuania, Morocco, The Netherlands, Nigeria, Norway, Palestine, Poland, Portugal, Romania, Russia, Serbia, Slovak Republic, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Syria, Tunisia, United Kingdom, United States of America and Vietnam.

Delegates included conservation practitioners and researchers from a wide range of PGR institutes, including crop breeding institutes, botanic gardens, universities and NGOs, as well as representatives of other stakeholder communities such as commercial breeding and seed companies, and suppliers of health products.

Scientific programme

The Conference comprised nine sessions:

- CWR conservation and use: an overview
- Establishing CWR inventories and conservation priorities
- CWR threat and conservation assessment
- Genetic erosion and genetic pollution of CWR
- *In situ* management and monitoring for CWR
- *Ex situ* conservation of CWR
- CWR information management
- CWR as gene donors for crop improvement
- Use of CWR and under-utilised species

Forty-five oral papers and 65 posters were presented during an intensive and motivating 3 days.

Discussion sessions towards a Global Strategy for CWR Conservation and Use (see page 11) and the establishment of the IUCN/SSC CWR Specialist Group (see page 10) were also convened during the Conference.

The full conference programme, list of participants and book of abstracts can be consulted online at: www.pgrforum.org or in the enclosed PGR Forum CD-ROM.



Delegates viewing the poster display and enjoying a coffee break at the First International Conference on Crop Wild Relative Conservation and Use

Peter Brindza

Opening session

Dr Jozef Turok, Regional Director of the IPGRI Regional Office for Europe, opened the conference by welcoming participants and giving thanks to the organisations and individuals involved in staging the event. Dr Turok introduced Dr Dario Cartabellotta of the Regional Government of Sicily, co-sponsors of the event. Dr Cartabellotta provided the audience with an insight into the value of wild plant diversity in Sicily, and explained how important the conference was in highlighting the plight of these vital resources, particularly for a region such as Sicily, which contains a high percentage of endemic species, but also is faced with many challenges in ensuring their effective conservation.

Dr Nigel Maxted from the University of Birmingham, UK and Coordinator of the PGR Forum project, welcomed participants and gave thanks to the sponsors and organisers. Dr Maxted noted how pleased he was not only to see many familiar faces in the audience, but also many new faces of people with a common interest in and concern for the future of CWR. This was followed by a few words of welcome from Mr Damiano Avanzato, representing CRA-Istituto Sperimentale per la Frutticoltura di Roma, co-organisers of the Conference.

Dr Kwesi Atta-Krah, Deputy Director General of IPGRI made an inspiring speech about the fundamental reasons why CWR are critical for nutrition, poverty alleviation and ultimately to the future of people's livelihoods. Dr Atta-Krah emphasised the importance of networking, but only when all members of a network are fully committed to contributing to its aims and to sharing responsibilities, and when it is outward-looking with strong links to policy and development. Dr Atta-Krah went on to say that while "this conference is intended to mark the end of a project (PGR Forum), I do not see it so much as the end of a phase, but rather as the beginning of a new phase of realism and sustainable action. Perhaps I should add that good networks do not die when projects end, but that they keep functioning for as long as there is a rationale and a benefit in collaboration. The key words for all of us need to be *sustainability* and *significance*...we all need to work together to ensure that this does not just end with a report but that it leads to the emergence of action along the development pathway".

"while this conference is intended to mark the end of a project (PGR Forum), I do not see it so much as the end of a phase, but rather as the beginning of a new phase of realism and sustainable action for CWR"

Dr Kwesi Atta-Krah, Deputy Director General, IPGRI



Peter Brindza

PGR Forum Project Coordinator, Dr Nigel Maxted giving his keynote presentation for Session 1

CWR conservation and use: establishing the context

Session 1, chaired by Wieslaw Podyma of the Ministry of Agriculture and Rural Development, Poland, was opened with a hard-hitting presentation given by Nigel Maxted explaining why CWR are of value, why they are a neglected resource and why there is an urgent need to conserve them now, without delay. Dr Maxted also provided an outline of the PGR Forum project, explaining its aims, activities and major achievements.

This was followed by three presentations addressing the conservation of CWR in the policy context. Nadine Azzu of the Food and Agriculture Organisation of the United Nations (FAO) outlined the policy instruments that provide a framework for CWR conservation at global level, including the FAO International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), the Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture (GPA) and the Convention on Biological Diversity (CBD). Dominique Richard of the European Topic Centre on Biological Diversity detailed the two main legal instruments at European level that are applicable to CWR conservation: the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention), applicable to 40 member States of the Council of Europe, as well as Burkina Faso, Morocco, Senegal, Tunisia and the European Community, and Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (Habitats Directive), relevant to the 25 EU countries. Alvina Avagyan of the Ministry of Agriculture, Armenia, described the various national programmes in Armenia that focus on conservation of PGR, including CWR, and highlighted the steps that need to be taken to ensure the policies are put fully into practice and are sustainable in the long-term.



First International Conference on Crop Wild Relative Conservation and Use, organised by the University of Birmingham, UK, CRA-Istituto Sperimentale per la Frutticoltura di Roma, Italy, the International Plant Genetic Resources Institute and Agricultural Extension Service of the Regional Administration of Agrigento, Italy

Establishing CWR inventories and conservation priorities

Chaired by Karl Hammer of the University of Kassel, Germany, session 2 kicked off with a PGR Forum dissemination paper presented by Shelagh Kell, PGR Forum Project Officer from the University of Birmingham, UK describing the creation of the PGR Forum CWR Catalogue for Europe and the Mediterranean. The Catalogue contains nearly 25,000 species and in excess of 273,000 records of taxon occurrences in 132 geographical units across the region, and has been used to undertake some initial analysis of the effectiveness of existing conservation initiatives for the conservation of CWR by cross-checking which species are included. Shelagh Kell highlighted the need for baseline CWR data and explained that the methodology adopted for the creation of the Catalogue could be used in any country or region, given access to the appropriate data.

Brian Ford-Lloyd, PGR Forum Deputy Project Coordinator from the University of Birmingham followed with a PGR Forum dissemination presentation addressing the issue of establishing conservation priorities for CWR. Dr Ford-Lloyd stressed that given there are nearly 25,000 species in the region (and in excess of 17,000 species in Europe alone), there is an urgent need to prioritise to ensure that resources are focused where they are most needed. The task is not easy, but a series of steps were proposed that can be taken at regional and national level to narrow down the list of 25,000 species to a more manageable and realistic preliminary list of species of conservation priority.

Maria Scholten, PGR Forum Project Assistant shifted the emphasis from an international to national level with a PGR Forum dissemination presentation by explaining a methodology for constructing a national CWR inventory, illustrated using a case study for the UK. She gave examples of how national inventory data can be combined with existing data associated with *in situ* conservation sites to undertake gap analysis.

The rest of the session comprised a broad range of presentations addressing CWR inventories and establishment of conservation priorities. National perspectives were given from

Russia by Tamara Smekalova of the N.I. Vavilov Institute of Plant Industry, Finland by Helena Korpelainen of the University of Helsinki, the Netherlands by Roel Hoekstra of the Centre for Genetic Resources, and for Palestine by Haitham Hasasneh of the GEF-funded Conservation and Sustainable Use of Dry Land Agrobiodiversity Project. At European level, François Lefèvre of the Institut National de la Recherche Agronomique, France presented a paper addressing the status of current knowledge and conservation priorities for European forest genetic resources. A special lunch-time slot was allocated for Olivia Diana from the European Commission Directorate General for Agriculture and Rural Development, Environment and Forest Unit to present the aims and scope of Council Regulation (EC) No 870/2004 on Genetic Resources in Agriculture.

CWR threat and conservation assessment

Chaired by José Iriondo of the Universidad Politécnica de Madrid, Spain, session 3 tackled the potentially complex issue of assessing threat and conservation status of CWR. The topic of approaching CWR Red Listing at national level was addressed by Joana Magos Brehm of the University of Birmingham and Jardim Botânico, Museu Nacional de História Natural, Portugal, who concluded that it is possible to assess risk of extinction, even for many poorly known species, but that in order to do so, a detailed review of population range, trends and ecology is required. Shahal Abbo of the Hebrew University of Jerusalem, Israel highlighted the importance of traditional farming systems in the conservation of CWR, using the example of endangered wild *Cicer* spp. in south-eastern Turkey, while Mauricio Parra-Quijano from the Universidad Politécnica de Madrid showed how *ex situ* gap analysis can reveal the true representativeness of CWR in gene banks, and biases in collections. Craig Hilton-Taylor of the IUCN Red List Programme was unfortunately unable to be present to provide an overview of CWR threat and conservation assessment from the PGR Forum perspective; however, a summary of PGR Forum Workshop 2, *Threat and conservation assessment* can be consulted on the PGR Forum web site (www.pgrforum.org/Publications.htm).

Genetic erosion and genetic pollution of CWR

Isaak Rashal of the University of Latvia introduced the 5 speakers in session 4. Eliseu Bettencourt of the Instituto Nacional de Investigação Agrária e das Pescas (INIAP), Portugal gave a comprehensive and powerful opening to the session with a PGR Forum dissemination presentation looking at how extensive the problem of genetic erosion and genetic pollution may be, concluding with recommendations for the way forward. This was followed by presentations from Mike Wilkinson of the University of Reading, UK who addressed the topic of assessing the potential for ecological harm from gene flow on CWR, Thierry Lacombe of UMR Diversité et Genomes des Plantes Cultivées, Equipe "Génétique Vigne", France who presented the characterisation of indigenous wild grapevine, Thomas Couvreur from Wageningen University, National Herbarium, the Netherlands who delivered a fascinating talk about reciprocal introgression between wild and cultivated taxa of the peach palm, *Bactris gasipaes* in Western Ecuador and Margarita Harutyunyan of the



Gabor Vörösvári

Daniel Zohary, Stephen Jury and José Iriondo and were among the 157 delegates at the First International Conference on Crop Wild Relative Conservation and Use

Armenian Agricultural Academy who highlighted the problem of genetic erosion leading to impoverishment of the *Aegilops* gene pool in Armenia.



Isaak Rashal

Sónia Dias giving an overview of CWR representation in *ex situ* collections in Europe

In situ management and monitoring for CWR

Åsmund Asdal of the Norwegian Crop Research Institute was chair of the session devoted to CWR conservation *in situ*. José Iriondo of the Universidad Politécnica de Madrid, Spain pounded home the message in his PGR Forum dissemination presentation that the only way forward for effective genetic conservation of CWR is to adopt the use of detailed population census techniques. Without understanding the make-up and behaviour of populations, it is not possible to adequately conserve them. A series of absorbing case studies were then presented: Nora Scarcelli of Institut de Recherche pour le Développement, France provided an insight into the role played by yam farmers in Benin in the conservation of genetic diversity; Nawwaf Al-Atawneh of the GEF-funded Conservation and Sustainable Use of Dry Land Agrobiodiversity Project detailed the needs and pitfalls of management planning for *in situ* conservation in the Middle East; André Toussaint of the Unité de Phytotechnie tropicale et d'Horticulture, Sciences agronomiques de Gembloux, Belgium presented an *in situ* conservation strategy for wild Lima bean (*Phaseolus lunatus* L.) populations in the Central Valley of Costa Rica: a case study of short-lived perennial plants with a mixed-mating system; Juozas Labokas of the Institute of Botany, Lithuania described the population performance of *Arnica montana* in different habitats, and Didi Kaplan of the Israel Nature and Parks Authority described a designated nature reserve for *in situ* conservation of the wild emmer wheat (*Triticum dicoccoides*) in northern Israel. The session concluded with a presentation from Valeria Negri of the Università degli studi di Perugia, Italy in which she addressed the potential for integration of wild plants and landrace conservation within farming systems.

“the only way forward for effective genetic conservation of CWR is to adopt the use of detailed population census techniques”

Ex situ conservation of CWR

Chaired by Daniela Benedikova from the Research Institute of Plant Production, Slovak Republic, Session 6 reviewed the extent of CWR representation in *ex situ* collections. Sónia Dias from the International Plant Genetic Resources Institute gave an overview of EURISCO, the European Internet Search Catalogue of *Ex Situ* PGR Accessions, which can be utilised to provide an indication of the number of CWR accessions held in *ex situ* collections in Europe. EURISCO reveals that there are 37,528 accessions of 2,629 wild species in European *ex situ* holdings, which is 4% of total *ex situ* accessions held by institutes providing data to EURISCO. Two perspectives on the role of botanic gardens in *ex situ* conservation of CWR were given in this session. Paul Smith of the Millennium Seed Bank (MSB), Royal Botanic Gardens Kew, UK stressed the role of botanic gardens as a vital source of data, particularly that associated with herbarium specimens, and of skills such as seed conservation, horticulture and conservation genetics. Suzanne Sharrock of Botanic Gardens Conservation International, based in the UK focused on the breadth of diversity housed by more than 2400 botanic gardens throughout the world and the role that botanic gardens play in the conservation of threatened species, and provided a window into BGCI's global database of botanic garden collections. Pedro García from the Universidad de León, Spain presented a case study on the *ex situ* conservation of three species of Spanish wild oats (*Avena* spp.), while Tatjana Sretenovic Rajcic from the Institute of Plant Genetics and Crop Plant Research, Gaterslaben, Germany presented an analysis of genetic variation within and between wild *Lactuca* gene bank accessions. Results showed that 6.4 % of the analysed material was redundant and that variation within accessions was higher than variation between accessions. The take home message was that accurate identification and use of appropriate sampling techniques when collecting, plus knowledge of the genetic variation of the material being conserved in gene banks may save valuable resources.

CWR information management

Stephen Jury from the University of Reading, UK and Coordinator of the Euro+Med PlantBase Project chaired Session 7, addressing management of CWR information. Sabine Roscher from the German Centre for Documentation and Information in Agriculture (ZADI) opened the session with her PGR Forum dissemination presentation giving an overview of the challenges and options for management of CWR information. She emphasised the importance of the internet for data access and sharing, and stressed the importance of the development of common data standards and tools for exchange of information. Jay Moore of Plantkind Consulting, information management consultant employed by the University of Birmingham and IPGRI described the creation and development of the PGR Forum Crop Wild Relative Information System, which is the first online information management system designed specifically to facilitate access to CWR data. He described the structure of the system, which comprises two main dimensions: the searchable PGR Forum CWR Catalogue for Europe and the Mediterranean and the data model for management of CWR information, with a particular emphasis on site and *in situ* population data. The system is available for consultation at: <http://cwrwis.ecpgr.org>. Three further presentations were given in this session. Christoph Germeier

from the Federal Centre for Breeding Research on Cultivated Plants, Germany provided details of wild relatives of *Beta* and *Avena* in the ECP/GR Central Crop Databases. 33 % of accessions recorded in the International Database for *Beta* are of wild material, compared to only 9 % of wild accessions recorded in the European *Avena* Database. Passport data associated with the accessions is in many cases comprehensive, but highly variable between species. Characterisation and evaluation data is available by varying degrees for all species recorded in the two databases. Ehsan Dulloo from the International Plant Genetic Resources Institute presented the open source software, GRIS (Genetic Resources Information System) as a tool for the management of CWR information, and outlined the purpose and scope of the GEF-funded project, *In Situ* Conservation of CWR Through Enhanced Information Management and Field Application. Rivka Hadas from the Israeli Gene Bank concluded the session by explaining the importance of careful management of passport data associated with seed collections of wild populations for improving the efficiency of CWR conservation and use.



Prof Vernon Heywood, keynote speaker for Session 9, *Use of CWR and under-utilised species*

CWR as gene donors for crop improvement

Toby Hodgkin (IPGRI) gave an enlightening talk on trends and perspectives in the use of CWR for crop improvement. Dr Hodgkin included results of a recent survey undertaken to assess the number of wild species utilised in crop improvement programmes for 10 selected crops, which show that 55 wild species have been used as gene donors. The multiple uses and high economic value of wild relatives was also emphasised.

The rest of the session was devoted to three case studies. Margaret Scholz of the Federal Centre for Breeding Research on Cultivated Plants, Germany gave a talk on the use of the secondary gene pool of *Hordeum* as a gene donor for crop improvement. Interspecific crosses of hexaploid wild *Hordeum bulbosum* with diploid and hexaploid *Hordeum vulgare* cultivars were screened for useful traits such as winter hardiness. Eitan Millet from Tel Aviv University, Israel gave an overview of genomes and sources of useful traits in wild cereals such as *Triticum turgidum* subsp. *dicoccoides* and *Aegilops* spp. Gabriella Sonnante of the Institute of Plant Genetics, Bari, Italy showed various uses of DNA markers in molecular breeding for useful alleles in wild relatives of *Lens*, *Brassica* and *Cynara*.

Use of CWR and under-utilised species

The ninth and final conference session started with a broad overview by Vernon Heywood from the University of Reading, UK on the usage and potential of wild plants. Professor Heywood emphasised the indirect uses of wild plants in ecosystem functioning as well as their important role in poor rural households. He listed a number of action points with regard to wild plants, which include the need to acquire more information on the actual contribution of wild plants to local economies, to campaign and target agricultural extension divisions in order to highlight the importance of wild plants, and to improve sustainable harvesting and pre-processing techniques to increase their value and stimulate their utilisation.

In his presentation on under-utilised species, Stefano Padulosi (IPGRI) also stressed the importance of wild plant species for poor rural households: "Poor communities around the world depend on these species for their livelihood. They are part of a strategic, culturally important, resource asset in support of nutrition, health and income generation." Under-utilised species are under-represented in *ex situ* collections, often ignored by policy-makers and excluded from research and development agendas. The cultivation of under-utilised, or minor crops is inextricably linked with indigenous knowledge; the threat of species extinction implies a loss of this knowledge with important consequences for on farm conservation. Co-presenter Irmgard Hoeschle-Zeledon reported on progress at EU level in achieving derogations for new crop imports from developing countries into the European Union.

Champika Kariyawasan from the Ministry of Environment and Natural Resources, Sri Lanka gave an overview of the importance of medicinal plants in Sri Lanka, where they are the source of primary health care for 70-80 % of people. More than 80 % of the 1432 medicinal plant species of Sri Lanka are harvested from the wild, while some are cultivated *in situ* in home gardens. Medicinal plants are faced by many threats in Sri Lanka, including habitat loss and alteration, over-harvesting, low economic value, lack of market incentives, lack of technology and technical skills for the development of products and inadequate regulations. Dr Kariyawasan explained the steps that are being taken to address these problems, and gave an overview of the 'Conservation and sustainable use of medicinal plants project'. Susan Curtis from Neals Yard Remedies, UK in the last oral slot of the conference represented the market perspective on uses of wild species. She addressed EU policy and ethical issues in the sourcing of original material and the necessity for regular talks with partners.

"there is a need to acquire more information on the actual contribution of wild plants to local economies, to campaign and target agricultural extension divisions in order to highlight the importance of wild plants, and to improve sustainable harvesting and pre-processing techniques to increase their value and stimulate their utilisation"



Shelagh Kell

Part of the display of CWR products, which included herbal teas and remedies, alcoholic beverages, vegetables, herbs and spices, conserves and soaps

Conference poster session

Each of the nine conference sessions included poster presentations. 65 posters from 28 countries were presented, reflecting the enormous interest and amount of work being undertaken in this field. A number of posters were prepared by PGR Forum partners to highlight the importance of CWR using example taxa, and to present the Crop Wild Relative Information System (<http://cwris.ecpgr.org>), including the PGR Forum model for management and exchange of CWR data. CWR case study handouts were also on display. The conference posters and case study handouts can be viewed on the PGR Forum web site (www.pgrforum.org/publications.htm) and are included on the PGR Forum CD-ROM enclosed with this issue.

Display of CWR products

With the poster session, CWR and CWR products were on display. Daniel Zohary presented a display of wheat and barley wild relatives along with a variety of cultivated ears, comparing the characteristics of the wild progenitors with the cultivated varieties. A wide array of products made from wild plants was also on display, ranging from alcoholic beverages, herbal teas and remedies, to soap made of algae.

Conference excursions

Agrigento, a city with some 60,000 inhabitants, was founded as a Greek colony in the 5th century B.C. and played a significant part in the history of that era. The province of Agrigento, with its rich natural and cultural heritage, not only provided an appropriate back-drop for the conference scientific programme, but also for the conference excursions and social events.

Delegates had the opportunity to have first-hand experience of seeing some of Sicily's wild plants at the Riserva Naturale Orientata di Torre Salsa, a WWF reserve which covers 500 hectares extending from the sea into the surrounding hills. The reserve not only contains a wealth of indigenous Mediterranean flora, but also encompasses an important breeding ground for sea turtles. Conference participants were taken on a guided tour through the reserve. Notable CWR found during the excursion were *Avena*

barbata, *Aegilops ovata*, *Haynaldia villosa*, *Thymus capitatus*, *Cynara cardunculus*, *Euphorbia dendroides* and large shrubs of *Salsola oppositifolia*. The endemic *Diploaxis crassifolia* was in flower. A complete inventory of the flora of Torre Salsa can be searched at www.wwforgesalsa.it/a.htm.

Other excursions included a visit to the birthplace of Pirandello, Nobel prize-winner for literature, who was born and later also buried near Agrigento, a visit to the castle of Montechiaro, which dates from 1300, and a guided tour of the Valley of the Temples (Valle dei Templi). Unique in the world, the Valle dei Templi combines Greek monuments of the fifth century B.C. with typical Mediterranean vegetation. It encompasses 500 hectares of almond and olive trees, and ruins from classical times. The national archeological museum there contains one of the most extensive Hellenistic collections in the world. Participants also had the opportunity of visiting the Kolymbetra Garden which is situated in a gorge in the heart of the Valley of Temples. It is thought that in ancient Greek times it consisted of a large pool that was used for games and fishing. In the 19th century it was transformed into a Mediterranean garden. Now, after many years of neglect, it has been restored to its former glory by the Fondo per L'Ambiente Italiano (FAI) (www.fondoambiente.it) and is one of the major tourist attractions of the Parco dei Templi. With the backdrop of some of the oldest olive trees in the world, and the ruined temples silhouetted against the sky, Professor Giuseppe Barbera from the University of Palermo gave an outdoor presentation in the garden on the cultural landscape of the Valle dei Templi.

Delegates were also delighted with a number of memorable social events, including: a welcome cocktail and buffet at the Palazzo del Gattopardo, generously provided by the Mayor of Montechiaro; a visit to the Stoai Theatre where a traditional Greek performance was presented, charting the history of Sicily; traditional Sicilian dinners accompanied by folk musicians and dancing, one of which was held at the farm of Volpara del Vuc-cazza, and was generously laid on by Dr Ignazio Vassallo of the Agricultural Extension Service of Agrigento; and a moonlit walk through the Valle dei Templi.



Presentation by Daniel Zohary comparing the characteristics of wild and cultivated wheat and barley

Maurício Parra-Cujigano

Organisation and support

The Conference was funded by the European Community Fifth Framework Programme for Energy, Environment and Sustainable Development and the Agricultural Development Service, Regional Government of Sicily, Palermo.

The Conference was sponsored and organised by the University of Birmingham (UK), the International Plant Genetic Resources Institute, CRA-Istituto Sperimentale per la Frutticoltura di Roma (Italy) and the Agricultural Extension Service of the Regional Administration of Agrigento (Italy).

The Conference organisers are also grateful to the Parco dei Templi, Municipality of Palma, Agrigento Wine Association and Agrigento Tourist Service for generously providing their services in support of the conference.

To consult the conference programme, list of participants, and book of abstracts, visit www.pgrforum.org or view them in the enclosed PGR Forum CD-ROM



Brian Ford-Lloyd

The WWF Riserva Naturale Orientata di Torre Salsa, visited by conference participants

Establishment of the IUCN/SSC Crop Wild Relative Specialist Group

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The establishment of the Crop Wild Relative Specialist Group (CWRSG) of the Species Survival Commission (SSC) of IUCN-The World Conservation Union was discussed during the plenary session of the First International Conference on Crop Wild Relative Conservation and Use. The CWRSG will bring together specialists from around the globe to work together towards the common goal of effective conservation and use of CWR. The SSC Chair, Holly Dublin, has invited Dr Ehsan Dulloo from the International Plant Genetic Resources Institute and Dr Nigel Maxted from the University Birmingham, UK to chair this group. Ehsan Dulloo and Nigel Maxted presented an outline of the work of the SSC and the justification for establishing this new group during the Conference.

The CWRSG co-chairs are currently planning the first steps in establishing the group, which will involve setting up the CWRSG Secretariat, production of a business strategy plan, establishment of the CWRSG web site, invitations to members and fund-raising. Information on progress in the establishment of the CWRSG will be circulated to *Crop wild relative* readers during 2006.

Draft objectives of the CWRSG:

- Ensure wild plant species of socio-economic value are adequately conserved and sustainably utilised
- Promote integrated conservation and provide exemplar case studies, involving *in situ* and *ex situ* techniques
- Develop effective strategies for gathering, documenting and disseminating information on wild plant species of socio-economic value
- Establish and maintain a global inventory and undertake threat assessment
- Provide advice, expertise and access to appropriate contacts to assist in the conservation of wild plant species of socio-economic value
- Increase awareness of wild plant species of socio-economic value to governments, institutions, decision-makers and the general public.



Towards a Global Strategy for Crop Wild Relative Conservation and Use

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Led by Professor Vernon Heywood, delegates at the First International Conference on Crop Wild relative Conservation and Use were invited to participate in group discussions towards the formulation of a Global Strategy for CWR Conservation and Use. Delegates divided into 6 groups during two discussion sessions which were led by Wieslaw Podyma of the Ministry of Agriculture and Rural Development, Poland, Nigel Maxted and Brian Ford-Lloyd of the University of Birmingham, UK, Sabine Roscher of the German Documentation Centre for Information in Agriculture, Germany, José Iriondo of the Universidad Politécnica de Madrid, Spain and Jozef Turok of the International Plant Genetic Resources Institute. The groups discussed a draft document and presented their results during the plenary session at the end of the conference. The Strategy is currently under review and development by conference participants.

Based on contributors' experiences of planning for other strategies of a similar nature e.g. the European Plant Conservation Strategy (EPCS) and Global Strategy for Plant Conservation (GSPC), delegates were aware that such a strategy must set practical and realistic goals if it is to be of real use to the global community. The Strategy will initially be sent to FAO, IPGRI and IUCN regional offices for review, with the eventual aim of delivering the document to the CBD Secretariat as a paper for consideration by SBSTTA (Subsidiary Body on Scientific, Technical and Technological Advice), and through them to governments. It is also anticipated that the Strategy will be sent to appropriate agencies or organisations such as UNDP (United Nations Development Programme), UNEP (United Nations Environment Programme), the EU (European Union), World Bank, WRI (World Resources Institute), CI (Conservation International), CGIAR (Consultative Group on International Agricultural Research), and leading aid and agricultural agencies. The Strategy, if adopted, will essentially provide an action plan for nations and regions to refer to in addressing the critical issue of effective CWR conservation and use. Practical steps that can be taken are included in the Strategy, based on existing experience and knowledge. For example, the identification internationally, and within each region and country of a small number of priority sites (international - 100, regional - 25, national - 5) for the establishment of active CWR genetic reserves. These reserves should form an interrelated network of internationally, regionally and nationally important CWR genetic reserve sites for *in situ* conservation. It is hoped that those charged with the task of taking forward the action plan will view the Strategy in the context of existing policy,

legislation and conservation initiatives where possible, rather than viewing the task as yet another obligation in the seemingly enormous task of biodiversity conservation. The Strategy can also provide the backdrop for the development of specific national and regional policy and legislative instruments.

The Strategy is built on 11 draft targets:

1. Prepare national action plans
2. Prepare national inventories
3. Establish a global mechanism/clearing house
4. Create national priority CWR lists
5. Create regional and global crop priority lists
6. Provide national and global CWR information management systems
7. Develop effective means of conserving and using CWR *in situ*
8. Develop effective means of conserving and using CWR *ex situ*
9. Assess CWR conservation and threat status
10. Ensure effective security and legislation of CWR
11. Initiate education and public awareness programmes on the importance of CWR.

Crop wild relative readers will be kept informed about the development of the Strategy.



Vicia pannonica Crantz (Hungarian vetch), a wild relative of cultivated vetch, photographed near a dry oak forest in the Buda Hills, Pilisszentiván, Hungary

László Udvardy

PGR Forum: a project ends, but the mission continues

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The EC Framework 5 funded project, European Crop Wild Relative Diversity Assessment and Conservation Forum (PGR Forum) came to an end on October 31st 2005, but in many ways the work is just beginning. PGR Forum had three short years to achieve its objectives, and it is safe to say that these objectives have been more than met.

What did PGR Forum set out to do? PGR Forum's objective was to provide a European forum for the assessment of taxonomic and genetic diversity of CWR and develop appropriate methodologies that can be applied to conserve this diversity. To meet this objective, a number of project deliverables were planned that would be a result of work centred around five intensive three day workshops. These products include:

- The PGR Forum CWR Catalogue for Europe and the Mediterranean, which contains nearly 25,000 species records in 132 geographical units across the region
- The PGR Forum Crop Wild Relative Information System (CWRIS), the first information management system designed specifically to facilitate CWR conservation and use
- Methodologies and practical guidelines for the *in situ* conservation of CWR (*in situ* data management, threat and conservation assessment, gap analysis, genetic reserve location and design, population monitoring and management, and genetic erosion and pollution assessment).

The CWR Catalogue is accessible online via CWRIS (<http://cwr.is.ecpgr.org>). CWRIS provides access to CWR information sources including uses, Red List status, taxonomy and nomenclature and *ex situ* collections. CWRIS also contains an CWR information management schema, available in XML format and illustrated with a number of taxon case studies.

Several further publications have arisen from the PGR Forum project. These include: five issues of *Crop wild relative*; the PGR Forum CD-ROM, enclosed with this issue; *Genetic Reserve Management Guidelines*, to be published in 2006 by IPGRI on behalf of ECP/GR along with *Proceedings of PGR Forum*

Workshop 5, Genetic Erosion and Genetic Pollution Assessment Methodologies; Crop Wild Relative Conservation and Use, based on the proceedings of the First International Conference on CWR Conservation and Use, to be published in 2006 by CABI (www.cabi-publishing.org/index.asp); several peer-reviewed journal and newsletter articles; a number of reports; and a series of CWR case study handouts.

A searchable copy of CWRIS, containing the PGR Forum CWR Catalogue for Europe and the Mediterranean, along with the contents of the public pages of the PGR Forum web site, which includes copies of *Crop wild relative*, CWR case study handouts, PGR Forum workshop reports and poster presentations and book of abstracts from the First International Conference on CWR Conservation and Use are provided in the enclosed CD-ROM. News of other publications arising from the PGR Forum project will be circulated to readers as they come available. A copy of the CABI text will be sent to all delegates to the Conference.

PGR Forum has achieved an enormous amount in a short space of time and with limited resources. This has been due to the collaborative efforts of a network of committed individuals who have the common aim of conserving these vital resources. But in many ways, both within Europe and globally, the work is only just beginning. There is now a need to act on the recommendations that have arisen from the PGR Forum project and the collaborative efforts of all those involved in CWR conservation and use around the world. The First International Conference on CWR Conservation and Use provided an opportunity to bring many of these experts and interested user groups together, and the success of the Conference is a clear sign of the recognition of the importance of CWR for future generations. A major outcome of the Conference is a draft Global Strategy for CWR Conservation and Use (see page 11 for further information). The Strategy provides a series of recommendations for practical steps that can be taken with the ultimate aim of "effective conservation and sustainable use of crop wild relatives, including all wild plant species of socio-economic value, at national, regional and global levels".

So, although PGR Forum has sadly come to an end, there is much work to be done, and with the Conference behind us, and recognised as an important milestone in CWR conservation and use, we must continue with our mission. Large-scale collaborative efforts will continue via the newly established IUCN/SSC CWR Specialist Group (see page 10), through the ECP/GR network and the work of other CWR projects, notably the UNEP/GEF-funded project, *In situ conservation of CWR through enhanced information management and field application*, coordinated by IPGRI. Further EU-funded CWR conservation projects are also in the pipeline.

All that remains is to say a hearty thank you to all involved in PGR Forum, who made the project such an enormous success. We look forward to future collaboration with you all. Cheers!



Shelagh Kell

PGR Forum participants sharing a final toast to the success of the project at the First International Conference on Crop Wild Relative Conservation and Use