

Networking on conservation and use of plant genetic resources in Europe and Asia

Report of the Second European Workshop

Vienna, Austria

15 May 2008



S. Kell and M. Schmidt



DIVERSEEDS

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Host institutes

The Organization for International Dialogue and Conflict Management, Austria
University of Natural Resources and Applied Life Sciences, Austria

Organizers

The Organization for International Dialogue and Conflict Management, Austria
University of Natural Resources and Applied Life Sciences, Austria
The University of Birmingham, United Kingdom

Front cover: Seeds of *Zea mays* cultivars stored in the gene bank of Arche Noah, Schiltern, Austria
Photo: Shelagh Kell

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1.0 Welcome and workshop introduction

1.1 Welcome from BOKU representative Prof. Hans-Peter Kaul and Markus Schmidt

Prof. Hans-Peter Kaul of the University of Natural Resources and Applied Life Sciences welcomed the participants to the institute and wished the group a successful meeting. He outlined the history and role of the University, in particular, the Institute of Agronomy and Plant Breeding at the Department of Applied Plant Sciences and Plant Biotechnology. The DIVERSEEDS project coordinator welcomed the meeting participants to Vienna.

1.2 Context and objectives of the second European workshop

Markus Schmidt outlined the context of the second DIVERSEEDS European workshop, which follows on from the first international meeting in Rome, December 2007 and the e-conference, which took place during March and April 2008. A second round of regional workshops are also planned in China and Thailand, leading up to the final international meeting which will take place in China, September 2008.

The specific objectives of the second European workshop were to:

1. Review the DIVERSEEDS e-conference in terms of:
 - a) Focus and quality of discussion
 - b) Contribution to further DIVERSEEDS activities
2. Discuss ideas for future project proposals and/or cooperation:
 - a) Thematic priorities derived from our PGR list for each breakout group at the first international meeting:
 - *In situ* / *ex situ* / integrated approach
 - Landrace / CWR conservation and use (e.g., methodology to define *in situ* CWR genetic reserves)
 - Neglected and Underutilized Crops, NUC (e.g., online resources for major NUC)
 - b) Outline of such projects, general structure, possible participants, open questions
 - c) Additional supporting activities (e.g., awareness raising)
 - d) Strengthening cooperation:
 - ECPGR on farm task force
 - UPS discussion group
 - e) Opportunities / possible funding sources:
 - National (e.g., UK, AT, DE; IT, CN)
 - International (e.g., FP7, UNEP)
 - f) Outline DIVERSEEDS recommendations for the EC-FP7
3. Review progress in the creation of the DIVERSEEDS documentary film and other dissemination material:
 - a) Clips filmed so far
 - b) Future activities
4. Discuss preparations for the second international meeting in China
5. Attend to any other business

The workshop agenda is presented in Annex 1. A list of workshop participants and those unable to attend can be found in Annex 2.

2.0 Review of the DIVERSEEDS e-conference

2.1 E-conference overview

Markus Schmidt outlined the general response to the e-conference, noting that most registrants were people included in the original invitation list. A summary of participation and statistics can be found in the document 'Summary: DIVERSEEDS e-conference on conservation and sustainable use of plant genetic resources in Europe and Asia' (<http://www.diverseeds.eu/uploads/file/Summary-e-conference-DIVERSEEDS.pdf>).

2.2 Focus and quality of discussion

Forum I: *In situ* / *ex situ* / integrated conservation

Jan Engels provided a brief summary and synthesis of the discussions in Forum I, dealing with *in situ*, *ex situ* and integrated approaches to PGR conservation. He noted that there had been a lot of discussion that essentially covered old ground; however, there were some useful indications of areas for further work (e.g., the majority of views were specifically on the topic of the *in situ* versus *ex situ* debate—a topic that is still debated and largely governed by political issues, such as access rights and sovereignty). Rivka Hadas stressed the point that nearly all the e-conference participants that contributed to this discussion thread were in agreement that from a scientific viewpoint, an integrated approach using both *in situ* and *ex situ* techniques is needed. Different taxa will require a different combination of techniques.

Jan Engels noted the discrepancy between the number of postings in Forum I on issues that have been extensively debated in the past and 'new' issues, such as developing indicators for safe conservation and genetic integrity, which was a topic that received very little attention in the e-conference.

Forum II: Landrace conservation and use

Korous Khosbakht outlined the discussion that took place in Forum II, landrace conservation and use. He noted that the issue of how to define landraces had taken a prominent position in the discussions and that it had been highlighted that the definition is important in order to make landrace inventories.

Further discussion took place during the workshop on issues of landrace conservation and use:

- Shelagh Kell noted that Valeria Negri and members of the On-Farm Task Force of the ECPGR *In Situ* and On-Farm Conservation Network are currently developing descriptors for landraces to aid data collection and management.
- Brian Ford-Lloyd explained that landrace names can be a good indicator of diversity (e.g., as demonstrated by three different studies of rice, sorghum and cowpea), though this does not apply to all crops. He also noted that a study of rice landraces conserved in the 1950s, compared with collections in 1996 showed no loss of genetic diversity, which emphasizes the importance of landraces for conserving genetic diversity.
- It was generally agreed that EU legislation on the conservation of seed varieties is an important issue for Europe.
- Markus Schmidt stressed that trying to persuade people to continue to grow landraces is not the way forward for their conservation. New, innovative and creative ways are needed to approach landrace conservation in the modern world (e.g., as shown by Pro Species Rara in Switzerland).

Forum III: Utilization and policy for neglected and underutilized crops (NUC)

Brian Ford-Lloyd summarized the discussion in Forum III, utilization and policy for neglected and underutilized crops (NUC). He noted that the response to this discussion topic focused almost entirely on the selection of plants, but not so much on the needs that would define what kind of NUC should be promoted. To underline this, Brian Ford-Lloyd raised the issue of identifying needs, rather than species that are potential crops. For example, in the UK, willow is grown as a commercial crop for biofuel. This is a good example of a NUC that has been rapidly brought into cultivation and developed with a lot of supporting research. In this case, willow was not identified as a potential underutilized species—rather, the need for biofuel arose and willow was identified as meeting the need.

Further discussion took place during the workshop on issues of NUCs:

- Markus Schmidt raised the question of whether new uses for existing crops should be investigated.
- Brian Ford-Lloyd stressed the need for inventories and pointed out that the CWR Catalogue for Europe and the Mediterranean, accessible online via the Crop Wild Relative Information System (CWRIS) contains NUCs for Europe and the Mediterranean.
- Jan Engels noted that Mansfeld's World Database of Agricultural and Horticultural Crops contains very useful information on crop uses. Shelagh Kell noted that the database is not currently searchable on uses and all the information is in free text form.
- Markus Schmidt noted that it would be useful to define uses. Shelagh Kell noted that this had already been done in the context of other projects (e.g., the Economic Botany Data Standard and IUCN Utilization Authority File). These standards are used by existing information systems, including CWRIS.
- Jan Engels noted that there is a danger in targeting particular NUCs for development because other NUCs will be marginalized.

3.0 Ideas for future project proposals and/or cooperations

3.1 General issues

The participants discussed the context and aim of the project proposals arising from the DIVERSEEDS project. Markus Schmidt explained that the project presented opportunities for further Euro-Asian collaboration. Jan Engels noted that we need to lobby the EC for more opportunities for funding for genetic resources conservation and use. Markus Schmidt believes that in EC-FP7 it is possible to identify funding calls to which applications could be submitted. Even though at first glance the title of the call may not seem relevant, the detailed description shows more information and sometimes open up new opportunities to submit a proposal.

3.2 Inter-regional crop wild relative *in situ* conservation initiative (ICWRISCI)

Shelagh Kell presented a concept note for a project proposal with the working title 'inter-regional crop wild relative *in situ* conservation initiative (ICWRISCI)', which was conceived by Nigel Maxted, University of Birmingham. Version 1 of the concept note had been reviewed by the project partners prior to the workshop and version 2 was presented. The meeting participants discussed the concept at some length during the workshop. Key issues arising are summarized below:

- It will be important to stress the link between CWR conservation and their use by plant breeders in the project proposal and to build in mechanisms for making CWR data and germplasm available to the breeder. It was suggested that a new work package is included to deal with this aspect. A partner from the plant breeding community could be invited to participate (e.g., a member of EUCARPIA, IFS or the European Federation of Biotechnology).
- Brian Ford-Lloyd suggested involving scientists from the Generation Challenge Programme—an international programme driven by the Consultative Group on International Agricultural Research (CGIAR), which 'uses advances in molecular biology and harnesses the rich global stocks of crop genetic resources to create and provide a new generation of plants that meet farmers' needs'. Under this programme, scientists are working to characterize germplasm and stimulate its use. To date, much research has been focused on overcoming drought.
- Brian Ford-Lloyd also suggested that the project should provide a link to the expanding field of gene mining, which is directly linked to germplasm use. Jan Engels noted that breeders are only interested in genes, not species.
- It was generally agreed that there should be a clearer link between the work packages and the project products. One possible rearrangement of the work packages could be to combine WPs 3–8 into one work package. WP9, product dissemination and public awareness could be split into two work packages. The products would be linked to the revised work packages as suggested in the table below:

Work package	Activity (short name)	Products
WP1	Methodological approaches to national CWR strategies	Methodology for national CWR conservation strategy development
WP2	CWR inventory data management	Enhanced CWR information management system
WP3	National CWR strategies	<i>In situ</i> and <i>ex situ</i> conservation of priority CWR germplasm
WP4	Access to and use of CWR germplasm	Facilitation of availability of CWR germplasm for breeders' use
WP5	Education and public awareness	Public awareness materials
WP6	Project management	Project coordination and reports

- It was noted that it may be more appropriate to identify the project partners once the structure of the project proposal is better developed. Countries and partners should be chosen on the basis of the applicability of their expertise to the project aims. It was also suggested that the national PGR coordinating institute of the countries participating in the project should be involved.

3.3 Clearinghouse for priority neglected and underutilized crop species for sustainable development

A second project idea was presented by Markus Schmidt, dealing with a 'one-stop-shop' web clearinghouse on neglected and underutilized crops. Although several monographs and publications are available on several NUCs, there is no place in the web where someone from a developing (and developed) country could easily access all kinds of information on a specific NUC, or on NUCs in general. It seems that the PGR community was not very keen in embracing web 2.0 technology in order to share information (even the 'Underutilized crop' entry in Wikipedia is a stub). In other research fields scientists maintain a web 2.0 Wikipedia-like website, such as the Open Wetware (<http://openwetware.org>), where they share all kinds of information on their work (protocols, new papers, background information etc.). The advantage is not only the availability of the currently available information, but also that this information is regularly updated by its users.

For the NUC community, however, there is currently no comprehensive and easy to search web portal for NUCs. Other fields are much better organized and share information and resources on a daily basis. We believe that the NUC community needs such a platform as well, in order to make older papers and manuscripts easily available but also to upload new information about NUCs as more and more knowledge becomes available. Thus, the project idea presented described the main steps forward in order to set up and maintain such a web 2.0 NUC clearinghouse: by collecting available information, setting up the dynamic website that allows users to update information, involving the most important NUC research centres to support and use this website, and promote the use of this website among people interested in NUCs. Such a website would ideally only need an initial investment, after that the site should be used and maintained by its users, as it is the case in other information sharing platforms.

4.0 Next steps

4.1 Documentary film

Camillo Meinhardt presented excerpts of the DIVERSEEDS documentary film to the meeting participants. Three to four minute stories have been put together which can be posted on the project website. Excerpts shown were the Svalbard seed vault, an organic farm in the UK, the Garden Organic National Potato Day, UK, the Israeli Gene Bank and Ammiad genetic reserve, Israel and the Heritage Seed Library of Garden Organic, UK. The short videos will be available to watch and download at <http://www.diverseeds.eu/index.php?page=video>

4.2 Preparation for the second international meeting in China

It was agreed that the meeting would take place over two and a half days with the addition of a one day excursion to visit a protected area and/or on-farm conservation project in Yunnan. Shelagh Kell will draft the programme for the meeting and circulate to the organizing committee for comment. Jan Engels noted that staff from Bioversity HQ could not attend the meeting as the dates clash with a Bioversity steering committee meeting. It may be possible for Bioversity to fund the participation of a member of the DIVERSEEDS advisory board. Jan Engels put forward the idea of using the remaining DIVERSEEDS project funds to run a workshop on facilitating the implementation of the ITPGRFA.

5.0 Any other business

5.1 Consensus statement on PGR and food security

Brian Ford-Lloyd and Jan Engels proposed that DIVERSEEDS presented an opportunity to produce a consensus statement on PGR and food security. This could be presented from a European and Asian perspective, based on the needs and issues highlighted in the project. Brian Ford-Lloyd suggested that the publication could fit well in the 'news and views' section of one of the high ranking scientific journals such as 'Nature' or 'Science'. Shelagh Kell suggested that a document could be drafted before the second international meeting in China and used for the basis of discussion at the meeting, with a view to agreement amongst the delegates on an agreed list of statements and recommendations. Brian Ford-Lloyd suggested that rice could be used as a pertinent illustration of the issues and what is needed to resolve them in the long term. The meeting participants agreed that this would be an important achievement of the project and Jan Engels noted that it could help open up channels for germplasm exchange between Europe and China. Brian Ford-Lloyd agreed to produce a first draft of the document and circulate within the next fortnight.

Annex 1. DIVERSEEDS second European workshop: agenda

Thursday May 15, 2008	
09:00	Welcome and Workshop introduction
	1. Welcome by BOKU representative Prof. Hans-Peter Kaul and Markus Schmidt
	2. Context and objectives of the first European workshop (MS)
09:20	Review of DIVERSEEDS e-conference
	3. Focus and quality of discussion (Forum I: JE, Forum II: KK, Forum III: BFL)
	4. Possible contribution to further DIVERSEEDS activities (all)
10:30	COFFEE
11:00	Ideas for future project proposals and/or cooperations
	5. Thematic priorities and outline of future projects for each breakout group incl. possible funding sources
	5.1 Group I: (RH, JE + discussion)
	5.2 Group II: e.g. methodology to identify CWR conservation areas, on farm conservation (KK, LM, SK + discussion)
	5.3 Group III: e.g. online resources for major NUC (MS, BFL + discussion)
13:00	LUNCH
14:20	Ideas for future project proposals and/or cooperations <i>cont.</i>
	6. Continuation of discussion on future project proposals (all)
	7. Additional supporting activities and ways to improve cooperation with other networks/initiatives (all)
	8. Outline for DIVERSEEDS recommendations for the EC-FP7 (MS, all)
15:40	COFFEE
16:00	Next steps
	9. Documentary film and other dissemination material (CM)
	10. Preparation for Second International Meeting in China (SK, MS)
	11. Other issues (all)
17:30	Summing up and close of workshop
19:00	Dinner at traditional "Heurigen" (Zimmermann) Mitterwurzerg. 20, 1190 Vienna

Annex 2. DIVERSEEDS second European workshop: list of participants

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