

# Temperate Oaks and Beech Network

## Summary of the second meeting

Birmensdorf, Switzerland, 3-6 June 1999



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## Summary of the meeting

#### Introduction

The main objective of the second EUFORGEN Social Broadleaves Network meeting held 3-6 June 1999 in Birmensdorf, Switzerland was to review the progress made in the conserv-ation of oak and beech genetic resources in European countries since the previous meeting and to update the joint workplan. Main tasks of the workplan concern the development of technical guidelines for gene conservation and management, common minimum documentation standards and public awareness activities (see Workplan update).

The meeting was attended by Network members from 25 countries. All country reports are published in this volume and are also available from the Internet web page. The List of Participants is given at the end of this volume.

A joint session on genetic research in oaks was organized on the first day of the meeting. A number of research partners involved in the EU/FAIR Project on Oaks (Synthetic maps of gene diversity and provenance performance for utilization and conservation of oak genetic resources) attended this session (see List of Participants). This provided an opportunity not only to present and discuss the main results obtained within the project, but also to exchange views and information regarding the further research needs in Europe. Possibilities for submitting joint project proposals for funding within the Fifth Framework Programme of the European Union and other, complementary options for cooperation and collaboration (such as bilateral 'twinning' arrangements) were discussed and will be pursued.

In view of the outcomes of the EUFORGEN Steering Committee meeting (held in November 1998), the scope of the Network regarding species was also discussed. It was agreed that a practical approach should be taken by the Network in addressing the overall gene conservation issues in oak and beech species, rather than their taxonomic status. Complementarity and possible overlap with the Mediterranean oaks Network will be clarified by the new Inter-Network Group composed of Chairs and Vice-Chairs of all five EUFORGEN Networks. At present the Social Broadleaves Network includes principal European white oaks (*Quercus robur*, *Q. petraea*, *Q. pubescens*) and related minor oak species, as well as beech (*Fagus* sp.).

The meeting was concluded by adopting the Workplan update.¹ Colleagues from the Swiss Federal Institute for Forest, Snow and Landscape in Birmensdorf were thanked for the excellent local organization of the meeting. Bulgaria offered to host the third Network meeting at a forestry training facility in the Rhodope Mountains. Implementation of the tasks agreed to be carried out by Network members and coordination of the ongoing activities will be on the agenda. The participants appreciated this offer and agreed that the meeting would be held in mid-June 2000.

See Internet site <a href="http://www.cgiar.org/ipgri/euforgen">http://www.cgiar.org/ipgri/euforgen</a> for news and follow-up information.

## Workplan update

#### Information exchange

Network members from Moldova, Ukraine, Hungary, Slovakia, Czech Republic, Austria, Switzerland, Italy, Slovenia, France, Luxembourg, Belgium, the Netherlands, Germany, Lithuania, Finland and Sweden briefly reported on the progress made at the national level since the first Network meeting (held in Bordeaux, in October 1997). Introductory country reports from Bulgaria, Croatia, Ireland, Norway, Portugal, Spain and the United Kingdom were presented.

During this period significant progress has been made in monitoring genetic diversity in both beech and oak throughout their natural distribution range. Intensive research has been carried out in a number of countries, particularly those involved in the EU/FAIR project and the project on broadleaved species in southeast Europe.

It was agreed that the introductory country reports and the updates be published in the Report of the meeting. The updates should be no longer than one single-spaced page of text plus tables/figures. They should typically mention the following items: practical conservation activities, inventories, legislation, research and public awareness.

The introductory reports should be no longer than 10 pages of text. Figures and statistics (e.g. area occupied by the species, overview of conservation activities) should be given in tables. The reports should follow the structure outlined previously (see Report of the first Network meeting):

- Occurrence and origin of Social Broadleaves in the country
- Current economical importance for the forestry sector
- Silvicultural approaches used
- Health state of the forest stands and threats to their genetic diversity
- Research activities and capacities related to genetic resources
- Current gene conservation activities in situ and ex situ (overview)
- Relevant nature protection policies and activities
- Tree improvement
- Use of reproductive material
- Institutions involved in the genetic resources activities in the country
- Summary of country priorities
- Needs for international collaboration.

All the country reports will be made available on the Internet [homepage of the Network <a href="http://www.cgiar.org/ipgri/euforgen/networks/social.htm">http://www.cgiar.org/ipgri/euforgen/networks/social.htm</a> ]. Other relevant information that should be included on this Web site was recommended: list of Network members, minimum list of descriptors for databases (see below), links with research projects and with institutes hosting national information about Social Broadleaves.

The introductory country reports and the updates should be sent electronically to J. Turok for compilation in the Report of the meeting **no** later than 31 July 1999. J. Turok will contact countries not represented in the meeting and will ask for their input according to the agreed structure and deadline.

### Research needs and coordination of research priorities

#### Ongoing EU/FAIR research project on genetic diversity in oaks

Results were presented of the EU/FAIR project entitled "Synthetic maps of gene diversity and provenance performance for utilization and conservation of oak genetic resources" (FAIR/OAK). This project brings together 12 different research stations from eight countries. Range-wide maps of chloroplast DNA polymorphism were shown and compared with fossil pollen deposit maps compiled from the European Pollen Data Base (EPD), managed by the University of Marseille. These maps revealed clear patterns of post-glacial recolonization routes across Europe. Phenotypic data for adaptive traits were compared among different provenances from a multisite provenance test established by S. Madsen in different European countries. The results indicated significant variation for survival, bud burst and growth components. Finally a genetic inventory of gene diversity based on six microsatellite loci was conducted in nine different Intensive Studied Populations (ISP) distributed across Europe. Oaks appear to be extremely variable, as indicated by the high number of alleles that were scored in all populations (from 12 to 32), but no significant trend of variation (among populations or between species) was detected for microsatellites. This project will end on 31 August 1999.

#### Project submitted to INCO-COPERNICUS

In 1997, an extension of the FAIR project to east European countries was submitted within the INCO-Copernicus programme. It had similar objectives as the FAIR project, particularly relating to the extension of the synthetic map of cpDNA polymorphism in east European countries. Twelve institutes were involved (six from east European countries and six from west European countries); the cooperation was planned in the form of a 'twinning' arrangement between labs.

#### New proposal for the EU Fifth Framework Programme (FFP)

A new proposal on oaks has been made for the Fifth Framework Programme (Quality of Life). Its objectives are: (1) to quantify intra- and interspecific geneflow, (2) to evaluate genetic and ecological consequences of geneflow, and (3) to identify effects of geneflow on the management of seed and conservation stands and on natural regeneration practices.

#### Future proposals for the inventory of gene diversity in the white oak complex

The extension of the survey of genetic chloroplast DNA (cpDNA) diversity to eastern Europe was discussed by the participants and a general agreement was reached to conduct these investigations following a systematic sampling scheme up to the limit of the distribution range of European white oak species (Ural Mountains). A most appropriate and feasible way was to consider separately the countries associated with EU/FFP (most Central and East European states) and non-associated countries (most European Newly Independent States), in view of the different sources for supporting cooperative efforts. These include:

- EU RTD (research, technology and development) projects
- Bilateral cooperation agreements between east and west European countries.

EU member countries<sup>†</sup>

Austria

France

Germany

United Kingdom

Spain

The Netherlands

East European countries<sup>‡</sup>

Bulgaria

Croatia

Hungary

Lithuania

Moldova

Slovenia
Slovakia

The following countries expressed interest in joining such a project:

Ukraine

The general frame of cooperation could be that the east European countries contribute to the inventory and collection of material and that the partners in west European (EU member) countries share the molecular techniques for scoring the cpDNA polymorphism. Six research labs involved in the ongoing EU/FAIR project intend to join a future project aiming at the extension of the cpDNA map to eastern Europe.

J. Turok will analyze the possible funding mechanisms to submit such a project within the FFP and will circulate this information to all Network members by 15 September 1999. Particular emphasis should be paid to involving the Caucasus countries (Armenia, Azerbaijan and Georgia). An overview of ongoing national and international projects and programmes related to genetic resources will be extracted from the country reports and distributed to all Network members by J. Turok.

#### Legislation

A brief synthesis was presented by S. de Vries on the basis of the information available in the country reports from the first Network meeting in Bordeaux. A form on the status of legislation and other regulations on genetic resources of oak and beech was distributed and completed by most participating countries during the meeting. Additional modifications should be sent to S. de Vries **no later than 20 June 1999**. J. Turok will circulate the updated version before including it in the Report of the meeting.

The distribution of the latest versions of the OECD and EU regulations by L. Ackzell to all Network members was acknowledged.

#### Documentation

J. Jensen prepared a list of common minimum descriptors for Noble Hardwoods which was recognized as a good starting point for Social Broadleaves. The minimum descriptors on Norway spruce as well as the concept note on databases and common minimum standards for inventories on Noble Hardwoods were mentioned. Several modifications in the list of descriptors were agreed upon. The list of obligatory descriptors was completed with voluntary descriptors on conservation status and regeneration. J. Jensen will summarize the modifications and send them to J. Turok for publication in the Report of the meeting by 15 July 1999. Any additional comments or suggestions should be sent to J. Jensen before 20 June 1999. The objective is to provide a minimum common format for databases on gene conservation units at a national level.

It was agreed that an international database for oak and beech species may be set up later but is not required at the present.

<sup>&</sup>lt;sup>†</sup> Greece was not part of the previous FAIR project but should be associated in a new cooperative project.

<sup>&</sup>lt;sup>‡</sup> Contacts should be made with other countries that were not represented at the meeting. Albania, Belarus, Macedonia (FYR) and Romania will be contacted.

#### Joint conservation strategies and technical guidelines

A questionnaire on the status of the conservation and management of Social Broadleaves in European countries was compiled by a working group composed of T. Geburek, R. Stephan and P. Bonfils. The questionnaire was distributed to Network members in March 1999. Response has so far been received from 12 countries. The questionnaire was divided into five chapters:

- Distribution of species
- Conservation measures implemented
- Assessment of genetic diversity within the country range
- Silvicultural management and use
- EUFORGEN Social Broadleaves Network.

The compilation was presented and discussed during the meeting. It indicated the need to clarify the following questions: completion of the survey, species covered by the Network and their natural range of distribution, monitoring of progress and technical guidelines.

All countries will either send their response or complete the missing information in the questionnaire and send it to T. Geburek by 15 July 1999.

It was agreed that up-to-date maps of the distribution ranges of individual Social Broadleaves should be developed in the future. Maps that are presently used in countries will be collected and completed with information about seed zones by Network members. These should be sent to T. Geburek along with the response to the questionnaire, or later, if they are not readily available. A proposal for producing joint maps will be made and discussed at the next Network meeting.

It was decided that the Network will develop Technical Guidelines on gene conservation and management of European white oaks. If the results of the survey clearly indicate the need to also consider beech, this species will be added.

The Guidelines will offer a synthesis of the knowledge available and will aim at providing advice to forest officers responsible for genetic resources at the national or regional level. Similar guidelines were produced by the *Picea abies*, Noble Hardwoods and *Quercus suber* Networks. They should be considered as a starting point for the Guidelines to be developed. The following outline was proposed and Network members were invited to contribute:

- 1. Introduction (A. Kremer and T. Geburek)
- 2. Genetic processes promoting diversity in species with natural hybridization (A. Kremer and P. Menozzi)
- 3. *In situ* conservation (including conservation strategies at the margins of the distribution range and conservation of valuable origins) (P. Bonfils, A. Alexandrov and I. Gracan)
- 4. *Ex situ* conservation (T. Skrøppa and S. Bordács)
- 5. Silvicultural management and use including movement of reproductive material (T. Geburek and L. Ackzell)
- 6. Conclusions (A. Kremer, T. Geburek, L. Paule and J. Turok).

The draft chapters will be prepared and distributed to all Network members one month before the next meeting. J. Turok will circulate the respective chapters from the other Networks to all authors before 15 June 1999.

#### Public awareness

D. Jacques presented a detailed outline of the slide collection and the accompanying information. Network members were strongly encouraged to contribute most relevant slides from their countries to the collection. The set of slides will be compiled and stored on a Photo-CD which will be presented during the next Network meeting. Missing items will then be identified. It was agreed that the collection will be made available separately for oak and beech on Photo-CDs (with high resolution) to Network members as well as on the Internet (with medium resolution). The name of the author and the EUFORGEN Social Broadleaves Network will be cited as source for using the collection in the future.

Slides should be sent to D. Jacques **before 15 October 1999**. All slides must be accompanied with a short text following the slide collection form proposed by D. Jacques. D. Jacques in consultation with F. Wolter will clarify the structure of the database and will send the modified version of the slide collection form to all Network members **by 15 July 1999**.

It was agreed to produce the public awareness leaflet in English before the next Network meeting (by IPGRI). Additional language versions will be discussed at the next meeting. Comments and suggestions on draft text (provided by I. Blada) should be sent to N. Cundall no later than 15 September 1999. N. Cundall, D. Jacques and J. Turok will develop the leaflet by the end of the year.

## Programme

#### Thursday 3 June

Arrival of participants at Zürich Airport (transfer of the participants from the Airport to the hotels)

Transfer of the participants from the hotels in Zürich to the Swiss Federal Institute for Forest, Snow and Landscape (WSL) in Birmensdorf

1415-1500 Opening of the meeting:

- Welcome host country/WSL
- Welcome Chair of the Network (A. Kremer)
- Introduction and format of the meeting (J. Turok)

#### Joint session with the EU/FAIR Project on Oaks

1500-1630 Research on oak genetic resources in Europe - results of the EU/FAIR Project:

- Phylogeographic map of chloroplast DNA diversity in oaks on a rangewide scale (R. Petit)
- Geographic variability in oaks based on provenance tests (S. Madsen)
- Comparative levels of diversity in *Quercus petraea* and *Q. robur* (A. Kremer)

1630-1645 Coffee break

1645-1830 Discussion:

- Extension of the phylogeographic map in eastern Europe
- Submission of an extended project proposal for funding to the EU Fifth Framework Programme

1830 Transfer to Zürich

#### Friday 4 June

0800 Transfer of the participants from the hotels to WSL

0830-0850 Social Broadleaves in the Swiss forest policy (M. Bolliger, Swiss Forest Agency)

0850-0920 Overview of legislation related to genetic resources of Social Broadleaves in Europe (S. de Vries)

0920-1000 Information and documentation (J. Jensen):

- Database of provenances in Quercus petraea and Q. robur jointly with EU/FAIR
- Standardized protocols for leaf morphology analysis, chloroplast DNA analysis and microsatellites - jointly with EU/FAIR

1000-1030 Coffee break

1030-1230 Discussion: common minimum information standards of the Network; descriptors and databases

1230-1330 Lunch at the WSL restaurant

1330-1800 Excursion to Bülach (management of oak genetic resources)

1800-1900 Direct transfer from Bülach to the "Uetliberg"

1900 Social dinner at Zürich-Uetliberg

#### Saturday 5 June

O800 Transfer of the participants from the hotels to WSL

0830-1000 Brief round-the-table updates on the progress made in countries (Moldova, Ukraine, Hungary, Slovakia, Czech Republic, Austria, Switzerland, Italy, Slovenia, France, Luxembourg, Belgium, the Netherlands, Germany, Denmark, Lithuania, Finland and Sweden)

1000-1030 Coffee break

1030-1230 Introductory country reports: Bulgaria, Croatia, Ireland, Norway, Portugal, Russian Federation, Spain and the United Kingdom

1230-1330 Lunch at the "Sternen" restaurant

1330-1530 Development of joint gene conservation strategies:

- Results of a survey conducted prior to the meeting (T. Geburek)
- Discussion: technical guidelines for the sampling, design and management of gene conservation units in Social Broadleaves

1530-1600 Coffee break

1600-1800 Public awareness:

- Leaflet (J. Turok)
- Slide collection (D. Jacques)
- Other public awareness initiatives

1800 Transfer to Zürich

#### Sunday 6 June

0800 Transfer of the participants from the hotels to WSL

0830-1000 Miscellaneous:

- Scope of the Network regarding species
- Next meeting

1000-1030 Coffee break

1030-1200 Approval of the report of the meeting

Conclusions

Closure of the meeting

1200-1300 Lunch at the "Sternen" restaurant

Departure of participants (Transfer to Zürich / Zürich Airport).

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