



Social Broadleaves 4



Fourth Social Broadleaves Network Meeting Bergen, Norway 14-16 June 2001 Summary of the meeting

Opening of the meeting

Antoine Kremer, Chair of the Network opened the meeting, welcomed the participants and thanked the Norwegian Forest Research Institute for its efforts in organizing the meeting. He also welcomed the newly attending country, Poland.

Tore Skrøppa welcomed the participants on behalf of the Ministry of Agriculture and the Norwegian Forest Research Institute. Norway has been involved in the EUFORGEN programme since the beginning and currently participates in three networks.

Tor Myking also welcomed the participants and provided some general information on Western Norway and the city of Bergen.

The northern limit of Social Broadleaves is in Norway and this influenced the topics for the seminar and the field trip. 15 000 years ago the country was covered by ice, then the ice gradually receded and trees started recolonizing the land. Pine, aspen and birch were the first to reappear followed by oak, ash and beech. Finally, Norway spruce came in.

There are 12 million hectares of forests in Norway and 7 million of these are productive. There are over 120,000 private owners and the average holding is 40 ha. Sustainable forest management is being actively promoted. The interest for forest genetic resources is growing and Norway is a signatory state of the main international environmental conventions. A committee to assess the management of Plant Genetic Resources has been created. The national strategy will be based on international conventions and Nordic cooperation and will be implemented by a National Board on genetic resources of crops, forestry and animals. The Forest Research Institute is in charge of forest genetic conservation component.

Recent activities on FGR conservation included an evaluation of native trees. Life history traits were examined and a general evaluation was carried out. All species were classified based on threats. Only one species is currently endangered (*Ulmus glabra*). The current conservation status was studied and recommendations were made. Breeding programmes are ongoing only on Norway spruce (80% of all seedlings planted). However, plantings have decreased and more and more people are relying on natural regeneration. Responsibility for nature conservation is being transferred to local authorities and there are some good examples that include genetic management (i.e. *Alnus glutinosa*). Genetic studies are also being started on different species.

For Norway spruce, further experiments are underway on influence on progenies of heat treatment during seed production and the implications on the resistance to lethal temperature exposure.

Simone Borelli provided some highlights of the EUFORGEN activities, meetings and outputs in the year 2001 and of those planned for 2002.

Antoine Kremer presented the agenda and it was adopted. Thomas Geburek and Ladislav Paule were appointed as rapporteurs.

Progress made in countries

Participants from twenty-seven countries (Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Lithuania, Luxembourg, Moldova, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom and Ukraine) attended and reported on the progress made in their respective national programmes. Full reports will be provided to the Secretariat in electronic format by **15 July 2001** and will be posted on the EUFORGEN Web Page. The meeting report will contain a summary table of main country activities.

Different countries raised issues of common interest:

- 1) *Health status*: In the past years there was an increase in defoliation due to various factors reported in Poland, Ukraine, Sweden and Germany. The question of making a survey on this topic was raised and it was suggested to obtain additional information from the initiative on forest health monitoring (**ICP Forests**).
- 2) *Autochthony*: several countries raised the need to verify autochthonous origin of stands dedicated to conservation. Further discussion on this issue will take place during the next meeting.
- 3) *Naturalized stands*: In various European countries (Netherlands, Belgium, Denmark, Hungary), native stands represent only a minor part of the oak forest left. However, stands of allochthonous origin were planted a few generations ago and evolutionary factors have contributed to the creation of "landraces" adapted to local conditions. The question of use of the naturalized stands as gene resources for conservation purposes was raised.
- 4) *Use of forest reproductive material*: Several participants raised the question of the use of forest reproductive material (FRM). There is concern that in some countries FRM originates from a limited number of sources. It was decided to address this important issue through an additional survey. However, some countries expressed doubts on the availability of reliable information.

Jan Kowalczyk presented an introductory country report on the current status of conservation of genetic resources of Social Broadleaves in Poland. This will be included in the meeting report.

Seminar

Post-glacial immigration of forest trees to Norway

Aage Paus presented a seminar on postglacial immigration of trees into Norway. The fossil method was used to determine the migration patterns. Percentage pollen diagrams were used to illustrate the history of vegetation over the last 14.000 years and how the different species entered the country. The first to enter were pioneer species with very efficient dispersal mechanisms and they spread quite fast throughout the country. Hazelnut spread particularly quickly, probably with additional help from man. Then, once conditions of soil and temperature improved, other species such as oak and elm arrived, followed by alder and finally by ash and lime. Human impact on vegetation started around 5000 years ago and important changes occurred. The increase in human population brought about very important changes in the forest structure and composition.

Present distribution of Social Broadleaves at the margin of the distribution range

Hans Blom made a presentation on the present distribution of Social Broadleaves in Norway prepared in collaboration with Bjørn Moe. Through a series of slides he illustrated the main species of broadleaves in Norway that here mostly reach the northernmost limit of their distribution.

Research

Participants reported on the results of the projects in which they are currently involved.

FAIR OAK (<http://www.pierroton.inra.fr/fairoak>)

The project ended in August 1999. A full inventory of chloroplast DNA (cpDNA) polymorphism was based on more than 2600 populations. 42 different haplotypes were identified and they followed clear geographic distribution patterns. CpDNA diversity was compared to the fossil pollen distribution map and resulted in the identification of colonisation routes. CpDNA diversity was also compared with the variation of phenotypic traits assessed in provenance tests. Among the 62 traits, only 7 exhibited significant differences among the cpDNA lineages.

The project also included intensively studied plots (ISPs) to compare the level of diversity between *Quercus petraea* and *Q. robur*. There seems to be limited differences in levels of nuclear diversity between the two species.

OAKFLOW (<http://www.pierroton.inra.fr/oakflow>)

The project has the aim of examining intra- and interspecific geneflow as a mechanism for promoting diversity. There are 13 partners and a number of

subcontractors which also host ISPs. The objectives are (i) to trace gene flow by pollen and seed, (ii) to evaluate ecological and genetic consequences of gene flow, and (iii) to evaluate impacts of gene flow on management rules.

The study of gene flow will be based on parentage analysis using microsatellite markers. This procedure has already been carried out on one small ISP in France and pollen dispersion probability curves have been elaborated. During the project, pollen and seed dispersal curves will be constructed in 13 different ISPs. This 4-year project started on January 1st 2001.

DYNABEECH (<http://www.biotheon.com/dynabeech>)

The objective of this project is to assess the impact of forest management on ecological and genetic structures in beech by comparing highly managed forest and "virgin forests" in 4 locations (2 ISP in total).

Six partners (Austria, France, Italy (2), Germany, the Netherlands) contribute to the project. Trees have been mapped in all plots and will be genotyped with isozyme and microsatellite loci. No significant difference of isozyme diversity was found between managed and non-managed forests. 17 microsatellites have been developed in the framework of the project and 6 will be used for paternity analysis. Phenological studies assessed the effects of management on phenology and seed production. There was also an attempt to identify clusters of trees with similar phenology. A new genetic ecological model is planned.

CYTOFOR (<http://www.pierroton.inra.fr/cytofor>)

Nine countries were involved in the project and the activities concentrated on 22 species of 7 different families (14 trees, 7 shrubs and one epiphyte) located in 20 European forests.

The project had a number of objectives, and included phylogeographic studies, history (postglacial migration routes) investigations, hybridization between species, links between ecological and population genetic studies, which will have practical implications for forest management. The tools included chloroplast DNA markers for phylogeographic studies. Geographical distances and genetic distances for the different species were compared. Distribution patterns of haplotypes appear to be strongly related to the biology of the species or to the history of the populations. *Sorbus torminalis* showed no geographic structure whereas the patterns for *Ulmus* were comparable to those for *Quercus*, showing a clear geographic pattern in Europe. The project will end this year and a final meeting will be held on June 27-29 2001, with invited participants from outside the project and from various European countries.

Dissemination of results

There are several EU projects currently active on FGR and many results are available. Therefore, it would be extremely timely to hold a scientific conference to share the results obtained by the different groups, particularly on the various ecological and genetic processes contributing to diversity (gene flow, migration and colonization, population size etc...). The conference would aim at a

synthesis of scientific results obtained in the different EU-funded projects, but also at analyzing the implications for management and conservation issues. The audience would include participants from the EU-funded projects, EUFORGEN network members and other stakeholders. A possibility for funding could be found within the accompanying measures in the Fifth Framework Programme at the EU and some initial contacts were made. The idea was to hold the conference in Strasbourg, in 2002. An alternative suggestion would be to have a joint meeting with the IUFRO conference that will be held in Slovakia in August 2002. Antoine Kremer will provide additional information in due course.

Technical guidelines

Survey on joint conservation strategies

The questionnaire is almost complete, however, some countries still need to provide the requested information. The report on the questionnaire will be prepared by Thomas Geburek, Patrick Bonfils and Richard Stephan by **15 December 2001** and will be included in the report of this meeting. The maps provided with the questionnaire will be scanned and stored on a CD ROM. Copyright issues will be checked by the Secretariat and the maps will be gradually posted on the EUFORGEN website.

An additional questionnaire on origin of material used for afforestation purposes will be prepared by Thomas Geburek, Richard Stephan, John Fennessy, Patrick Bonfils, Csaba Mátyás and Frank Wolter and distributed to participants by **30 June 2001**. Responses will be compiled and the results presented at the next network meeting.

Discussion of draft technical guidelines

Antoine Kremer briefly presented the results of the InterNetwork Meeting as an introduction to the discussion on technical guidelines. He outlined the results of the general discussion on the future directions of EUFORGEN. He also summarized the technical issues that were discussed including monitoring, minimum descriptors, joint bibliography, technical guidelines, policy and legal issues, terminology, language, research needs, collections, public awareness and communication and organization of joint networks meetings.

The participants were then divided into three groups to provide final comments on the three main sections of the species-specific guidelines.

Authors will incorporate the comments and provide the revised version to the Secretariat by **30 September 2001**. Authors will also be responsible for selecting illustrations. The introduction and conclusions will be prepared once the other material is available.

Documentation

Information platform

Simone Borelli briefly described the structure of the new website of the IPGRI Regional Office for Europe and particularly of the section devoted to information

on National Programmes. It was agreed that individual country pages would provide links to the main institutions involved in forest genetic resources conservation. All participants will provide the relevant information at their earliest convenience. The participants agreed to check their entries periodically and advise the Secretariat of any changes.

Bibliography

Simone Borelli reported on the current status of the EUFORGEN Bibliography, which currently contains approximately 1700 references. The issue of sources for obtaining gray literature was raised and it was decided not to provide the address of individual network members that provided the information, in order to minimize inappropriate requests.

Another issue was that of contributions to the bibliography. In order to facilitate the incorporation of additional references, it is essential to utilize the standard formats provided. The Secretariat will circulate the form in Access and Excel to the EUFORGEN listserver by **30 June 2001**.

Public awareness

Poster

Sven de Vries briefly presented the proposed poster on Conservation of Genetic Resources of Oaks in Europe. Patrick Bonfils explained that the text includes both information and objectives of the Network. The poster is intended to address a wide audience of foresters and managers. The message includes elements on the importance of conserving gene resources and of the additional effort that is needed.

The agreed version of the poster will be provided to the Secretariat by **30 June 2001**. The Secretariat will then prepare a PDF version of the final layout with the assistance of professional graphic designers and will circulate it for comments by **30 September 2001**. The poster will be printed and distributed by **31 December 2001**. Templates for translation into national languages will also be available at the same time.

Slide collection

Els Coart briefly reported on the status of the slide collection. Some themes could be further completed and Dominique Jacques will circulate the list of topics that need additional slides by **15 July 2001**. There was also a proposal to create a joint EUFORGEN slide collection and to post it on the website. The Secretariat will evaluate the possibility of creating a common CD.

Other public awareness initiatives

There was discussion of preparing a standard press release to be used at the occasion of Network meetings for raising local public awareness. The

Secretariat will prepare a draft document to be circulated to the Network in due course.

Other proposals included:

- Production of a EUFORGEN cap.
- Cooperation with CABI on the Forestry Compendium, particularly on the issues related to forest genetic resources conservation and use.
- Preparation of an article for popular science magazines.

Date and venue of next meeting

Slovakia offered to host the fourth Network meeting either in June or September 2003. This proposal was endorsed by the group. The Secretariat will confirm the exact dates in due course.

Election of the new chair and vice-chairs

It was proposed that Ladislav Paule and that Ned Cundall would be the next Chair and Vice-Chair of the Network. The Network endorsed the proposal. Antoine Kremer thanked the local organizers for the excellent organization of the meeting and of the field excursions. On behalf of the Network, Csaba Mátyás expressed the gratitude of the group to Antoine Kremer for his leadership and the input he made to the Social Broadleaves. Ladislav Paule added his thanks and also thanked Thomas Geburek for his contribution as Vice Chair.

Any other business

Ladislav Paule reminded the participants of the announcement of the IUFRO Conference on Evolutionary Genetics and invited everybody to attend.

Sven de Vries raised the issue of the name of the Network and he proposed to change it to "Temperate oaks and beech" and the group endorsed the proposal. This will be discussed by the Secretariat in coordination with the Chair and Vice Chair, which will verify whether this is possible without prior approval of the Steering Committee.

Conclusion

The report of the meeting was adopted. The EUFORGEN Secretariat and the Chair of the Network expressed once again their appreciation of the local arrangements and thanked all participants for their contribution. Ladislav Paule, new Chair of the Network declared the meeting closed.

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