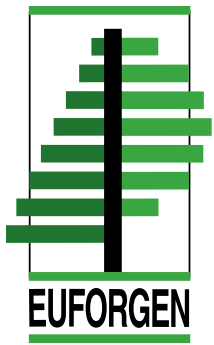




Scattered Broadleaves Network

Summary of the third meeting

Drøbak, Norway, 20-22 May 2008



European Forest Genetic Resources Programme (EUFORGEN)

Summary of the meeting

Opening of the meeting

T. Myking, the local organiser of the meeting, welcomed the participants from 27 countries to Norway and introduced Pål Vidar Sollie, Director General of the Department of Forest and Natural Resource Policy, Ministry of Agriculture and Food. P.V. Sollie gave an overview of the Norwegian forests and the MCPFE process. He noted that Norway is now hosting the MCPFE Liaison Unit in Ås, near Oslo and coordinating the efforts to implement the Warsaw Declaration and Resolutions, made by the fifth Ministerial Conference in Poland in November 2007. He continued by highlighting the role of EUFORGEN as an implementation mechanism for Strasbourg Resolution 2 and other relevant commitments. He also underlined the relevance of forest genetic diversity and related research efforts in the face of climate change.

B. De Cuyper, Chair of the Network, thanked the organizers for the meeting arrangements and welcomed the participants to the meeting. He also introduced C. Koziol as the new Network representative from Poland.

J. Koskela welcomed the participants on behalf of the EUFORGEN Secretariat and presented a tentative agenda of the meeting, which was then adopted. F. Aravanopoulos, R. Brus, E. Collin and J. Cottrell were nominated as rapporteurs for the meeting.

EUFORGEN update

J. Koskela provided an update on various EUFORGEN and other activities or events, namely 1) Development of a European Information System on Forest Genetic Resources (EUFGIS), 2) EUFORGEN Steering Committee meeting in May 2007, 3) Inter-Network meetings in May and October 2007, 4) 5th Ministerial Conference in November 2007, and 5) development of the State of World's Forest Genetic Resources report by FAO.

The EUFGIS project started its activities on 1 April 2007 for a period of 42 months (lasting until 30 September 2010). EUFGIS is co-funded by the European Commission under Council Regulation No 870/2004 on genetic resources in agriculture and it is coordinated by Bioversity International. The project aims at developing pan-European minimum requirements for dynamic gene conservation units of forest trees and related data standards before creating a web-based, permanent information system on these units in Europe. It will also provide some training on FGR documentation for national focal points, which will then compile relevant national data for the information system. A total of 34 countries have nominated their focal points so far.

He informed the participants on the outputs of a EUFGIS workshop organized in Birkerød, Denmark on 23-24 October 2007. The workshop was attended by the national focal points, representatives of the EUFORGEN Network, FAO, Global Biodiversity Information Facility (GBIF) and the TREEBREEDEX project as well as the EUFGIS partners. The purpose of the

workshop was to analyze the current state of FGR documentation in different countries and share information and experiences among national focal points. The workshop made several recommendations for the development of pan-European minimum requirements for the gene conservation units and for the information system.

After the workshop, a small expert group held a one-day meeting in Denmark and started its work to develop the harmonized minimum requirements and data standards. The expert group met for the second time in Avignon, France on 8-9 April 2008 and discussed the first draft of the minimum requirements and data standards. The Scattered Broadleaves Network is represented in the expert group by L. Vietto and P. Rotach.

J. Koskela then informed the outcomes of the fifth EUFORGEN Steering Committee meeting, held in Novo mesto, Slovenia on 22-24 May 2007. The Steering Committee reviewed the progress made during the first half of Phase III and discussed on the Network activities, the EUFGIS project and the impact of climate change on FGR conservation and forest management. Furthermore, the Steering Committee discussed its inputs to the MCPFE process. Regarding the Network activities, the Steering Committee concluded that they are in line with the objectives of Phase III. It was also noted that the work plans of the Networks should not be too ambitious and that the Networks need to show tangible results at the end of Phase III. The Steering Committee also pointed out that the coordination between the Networks should be increased as they are engaged in many similar efforts (e.g. the EUFGIS project and the development of the common action plans (CAP)).

He continued by presenting the outcomes of the Inter-Network meeting held in Novo mesto, Slovenia on 25 May 2007. In addition to the recommendations of the Steering Committee, Chairs and Vice-Chairs discussed development of common action plans, inputs of the Networks to the EUFGIS project and climate change. It was noted that the Scattered Broadleaves Network has made most progress in developing the common action plans while other species-Networks are starting to collect information on the proposed gene conservation units from different countries. It was agreed that the species-Network should publish the plans as separate publications, targeted to forest managers. The Forest Management Network could then develop later an overview for policy-makers and forest managers. The Inter-Network meeting also concluded that the EUFGIS project is a useful platform to strengthen collaboration between the Networks and to facilitate the finalization of the common action plans. Regarding climate change, it was agreed that all Networks should discuss how to address the issue in their future work; the Forest Management Network should focus on the management implications of climate change and the species-Networks on the consequences of climate change for gene conservation of forest trees in Europe. Another Inter-Network meeting took place in Birkerød, Denmark on 22 October 2007 after the EUFGIS workshop and then Chairs and Vice-Chairs updated themselves on the progress made after the first meeting.

J. Koskela also briefed the participants on the outcomes of the fifth Ministerial Conference on the Protection of Forests in Europe, held in Warsaw, Poland on 5-7 November 2007. Among other issues, Warsaw Declaration commits European countries to maintain and enhance the biological diversity of forests, including their genetic resources, through sustainable forest management. The declaration also highlights the role of forests and their sustainable

management in combating the negative effects of climate change. The conference also made two declarations; Warsaw Resolution 1 (Forests, Wood and Energy) and Warsaw Resolution 2 (Forests and Water). Furthermore, the week of 20-24 October 2008 was declared to be the Pan-European Forest Week 2008 (for further information visit www.europeanforestweek.org). During the conference in Warsaw, reports on the State of Europe's Forests 2007 and on the Implementation of MCPFE Commitments were also released. The first report provides information on the implementation of sustainable forest management based on the pan-European criteria and indicators and the second one on national and pan-European activities to implement various MCPFE Resolutions between 2003 and 2007. EUFORGEN provided inputs to both reports which can be downloaded from the MCPFE Website (www.mcpfe.org).

In January 2008, Poland handed over the coordinating responsibility of the MCPFE process to Norway which has now established a new Liaison Unit, based at the Norwegian Forest and Landscape Institute in Ås. The new Liaison Unit organized an expert level meeting in Oslo on 7-8 May 2008 and initiated discussion on actions to implement the commitments of the Warsaw Conference. The meeting discussed a draft work programme and shared information on forest policy issues in Europe and at global level. In addition to proposing actions to implement the Warsaw commitments, the draft work programme also includes actions to define the strategic direction of the MCPFE process to facilitate discussions on its future role.

Actions proposed for the work programme mainly include those ones the Liaison Unit Oslo has a leading role. Many delegates from the participating countries and observer organizations expressed their interest to include additional actions into the work programme. The revised version of the work programme will probably include an annex for such actions. Actions for continuing implementation of the earlier Ministerial commitments were also largely missing from the draft work programme although the Warsaw Declaration also reinforced implementation of the earlier commitments.

Regarding the strategic direction of the MCPFE process, the meeting concluded that the Liaison Unit Oslo should assign a small group of external expert to assess progress made and obstacles faced in the implementation of the commitments made by the five Ministerial Conferences. The review will be finalized by the end of 2009. Simultaneously with the external review, the meeting agreed to establish a working group to explore the potential added value of and options for a legally binding agreement on forests in the pan-European region. The working group should also provide its findings by the end of 2009.

Finally, J. Koskela briefed the participants on the FAO work on forest genetic resources. The 14th Session of the FAO Panel of Experts on FGR was held in Rome between 31 January and 2 February 2007. The Panel recommended FAO to take stronger action to support the work on forest genetic resources and to increase its knowledge base on the current status of forest genetic resources by developing a State of World's FGR report with linkages to the Forest Resources Assessment. The Panel recommendations were further discussed at the 11th Session of Commission on Genetic Resources for Food and Agriculture on 11-15 June 2007. The Commission decided to include the development of State of World's FGR into its Multi-Year Programme of Work. The Commission further recommended that the FAO Forestry

Department and the Regional Forestry Commissions should be fully involved in preparing this report, in collaboration with relevant regional and global programmes. FAO is currently developing a proposal for the structure and content of the SOW FGR report. It will be further discussed at 15th Session of the FAO Panel of Experts, to be held in November or December 2008. The proposal will be also discussed by the FAO Committee on Forestry in March 2009. In September 2009, the next Session of the Commission on Genetic Resources for Food and Agriculture should then endorse the plan for developing the SOW FGR report and provide funding for it. This global report is expected to be published by 2013.

Development of common action plans for scattered broadleaves

The leaders of the three CAP groups (B. De Cuyper, E. Collin and R. Brus) provided an update on the progress made in collecting information on gene conservation units and selecting them for the pan-European network of these units. Earlier, the Network had decided to develop CAPs, as a first step, for selected scattered broadleaves (i.e. Group 1: *Fraxinus excelsior* and *Prunus avium*; Group 2: *Populus nigra* and *Ulmus laevis*; Group 3: *Pyrus pyraeaster* and *Sorbus torminalis*). The tree species were grouped based on similar habitats.

B. De Cuyper reported that Group 1 had received proposals of gene conservation units from 21 countries. For *Fraxinus excelsior*, a total of 33 gene conservation units (*in situ*) have been proposed by Belgium (3), Bulgaria (1), Denmark (13), Germany (3), Netherlands (1), Norway (4), Slovakia (2), Slovenia (3), Switzerland (3), Turkey (1) and UK (2). Belgium has proposed additional 3 units (*ex situ*) for *Fraxinus excelsior*. For *Prunus avium*, there are a total of 37 gene conservation units (*in situ*) proposed by Belgium (4), Bulgaria (1), Denmark (15), Germany (3), Greece (4), Netherlands (1), Romania (2), Slovenia (2), Switzerland (3) and UK (2). In addition, a total of 6 *ex situ* units were proposed by Germany (4), Greece (1) and Switzerland (1) for *Prunus avium*. He also stressed the close relationship between the selection of valuable gene conservation units and the activities of the EUFGIS project.

E. Collin then summarised the proposals received by Group 2. For *Populus nigra*, there are 17 proposed units (*in situ*) by Belgium (1), Bulgaria (1), Croatia (1), Germany (2), Italy (1), Netherlands (1), Portugal (1), Slovenia (1), Spain (2), Switzerland (4) and Turkey (2). Furthermore, 10 *ex situ* units were proposed consisting of 5 clonal archives and 5 clonal rehabilitation plantations in Germany (1), Italy (6) and Turkey (3). For *Ulmus laevis*, there are 12 proposals on *in situ* units from Belgium (1), Bulgaria (2), France (2), Germany (4), Greece (1), Netherlands (1) and Switzerland (1). A total of 6 *ex situ* units have also been proposed by 2 Belgium (2), Finland (1), Germany (1), Greece (1) and Switzerland (1). An additional clonal archive was proposed by Greece for *Ulmus minor*.

E. Collin also noted that in many cases the reasons for proposing the units were not clearly explained in the 'Justification' column of the data collection tables. In other cases, such explanations are missing and this makes the work of the CAP group more difficult. For very few units, some basic information on the population size (i.e. area and number of flowering trees) is still pending. The proposed units for *Populus nigra* and *Ulmus laevis* provide a sound basis for the development of CAPs but more gene conservation units are needed from other countries. He mentioned that several *in situ* conservation stands of *Populus nigra* are in the

final selection process in France, and that some of them will be proposed to the CAP group this autumn. He also said that more *in situ* units of *Ulmus laevis* will be proposed once the ongoing population genetic studies in several countries have been finished.

The progress of the third group was reported by R. Brus who informed that 8 countries had proposed units for his group. For *Sorbus torminalis*, there are 16 proposed units (*in situ*) from Bulgaria (1), Germany (3), Romania (2), Slovakia (1), Slovenia (1), Switzerland (5), Turkey (1) and UK (2). In addition, 2 clonal seed orchards of *Sorbus torminalis* were proposed as *ex situ* units by Germany (1) and Switzerland (1). For *Pyrus pyraster*, the group received proposals on 6 gene conservation units (*in situ*) from Bulgaria (1), Germany (1), Slovenia (1) and Switzerland (3). Furthermore, Germany and Switzerland each proposed one clonal seed orchard of *Pyrus pyraster* as *ex situ* units. He also noted that, in some cases, information on the units was provided in agreed form or a clear way. The justifications for proposing the units were also often very general or missing. This made the work of the third group more difficult. Similarly to Group 2, Group 3 also is still waiting for some basic information on population size (area, number of flowering trees) for some of the proposed units.

R. Brus concluded that the 26 proposed units is a good start. In case of *Sorbus torminalis*, the entire geographical range of the species is relatively well represented by the proposed units but there are still considerable gaps in parts of south-eastern and western Europe. In case of *Pyrus pyraster*, the geographical range is not sufficiently covered by the proposed units and there are large gaps in south, west and east Europe. Future efforts should also focus on including several marginal populations of both species.

After the updates, the participants discussed the experiences gained and problems faced by the three groups. It was questioned whether the groups should include those units which have not yet been officially recognised as gene conservation units by national authorities. Some participants suggested that they should be included to speed up the process at national level. However, others raised concerns that the pan-European networks of the units should not include any 'paper' units or areas which should be gene conservation units but in which no effort are made for this purpose. It was concluded that those units for which the national selection process is already underway can be included with a remark on this in the data collection table.

Some countries had proposed numerous units and the participants discussed if it would be easier for a country to make the selection of the units instead of the CAP groups. It was concluded that the CAP groups should still make the selection in such cases. At the end, it was pointed out that data on all those gene conservation units which meet the pan-European minimum requirements for the units will be included into the EUFGIS information system. Thus all relevant units will be documented at a later stage. It was also proposed that the EUFORGEN Secretariat should send a letter, on behalf of the CAP groups, to each Network member who have proposed units and inform them which units were selected to the pan-European network and which ones were not. Finally, it was agreed that the CAP groups will meet separately in the evening of the first meeting day to clarify any pending issues and finalize the selection of the proposed units based on the minimum requirements and the geographical distribution of the units and the species.

The CAP groups then reported the progress of their evening discussions during the second meeting day. Nearly all *in situ* proposals were accepted or considered acceptable on the condition that the pending data on population size is made available. Units which are conservation seed orchards and rehabilitation plantations with a sufficient number of genotypes were also accepted but *ex situ* clonal archives were considered not to meet the principles of dynamic gene conservation. The proposed units were classified in four categories, i.e. “selected”, “provisional” (decision pending until missing data is received), “removed” (withdrawn by the proposer) and “rejected”. The groups concluded the selection of the units for each species as follows:

Species	Type	Proposed	Accepted	Provisional	Removed	Rejected
<i>Prunus avium</i>	<i>in situ</i>	37	21	4	-	12
	<i>ex situ</i>	6	4	1	1	-
<i>Fraxinus excelsior</i>	<i>in situ</i>	35	27	-	-	8
	<i>ex situ</i>	2	2	-	-	-
<i>Populus nigra</i>	<i>in situ</i>	17	15	1	1	-
	<i>ex situ</i>	10	2	1	5	2
<i>Ulmus laevis</i>	<i>in situ</i>	12	11	1	-	-
	<i>ex situ</i>	6	5	-	1	-
<i>Sorbus torminalis</i>	<i>in situ</i>	16	10	4	2	-
	<i>ex situ</i>	2	1	-	-	1
<i>Pyrus pyraeaster</i>	<i>in situ</i>	6	6	-	-	-
	<i>ex situ</i>	2	2	-	-	-

It was agreed that the EUFORGEN Secretariat will send a feedback letter to all Network members who have proposed units. For this purpose, each CAP group should provide the Secretariat with a list of selected and rejected units per species and per countries once they have finished the selection of additional units.

All Network members who have not yet proposed any units for the six tree species are encouraged to send their proposals to the CAP groups by **15 September 2008**. The groups should then evaluate the new proposals by **15 October 2008**. The Secretariat will develop, in consultation with all Network Chairs and Vice-Chairs, an outline of the CAP publication by **30 July 2008** and will send it to the groups for their information (each species-Network will develop its own CAP publication using the same template). Each CAP group should then finalize a draft chapter on their species for the publication by **21 December 2008** and send it to the Secretariat.

Finally, it was agreed that a 'status' field should be added to the data collection table (i.e. designated gene conservation unit or national designation process underway). T. Myking volunteered to develop a list of keywords to be used in the 'justification' field and circulate it for comments in early June 2008. It was also discussed whether the Network should initiate the CAP work for additional tree species but it was decided to limit to the present six species to ensure that the results can be presented at the next Steering Committee meeting.

Establishment of a European Information System on Forest Genetic Resources

Survey on FGR documentation in Europe

M. Bozzano presented summary results of the EUFGIS survey on documentation of *in situ* gene conservation of forest trees in Europe. The survey was filled by the national focal points in September 2007 before the EUFGIS workshop. The purpose of the survey was to obtain information on *in situ* gene conservation efforts, how countries have organized their documentation of these efforts, what kind of IT tools are used for this purpose and what kind of national information systems exist at the moment. The full survey results are available at the EUFORGEN Website (www.euforgen.org).

Development of common minimum requirements and data standards for gene conservation units of forest trees in Europe

J. Koskela presented an update to the work of the EUFGIS expert group which is developing pan-European minimum requirements for dynamic gene conservation units of forest trees and related data standards for these units as part of the project. He started by highlighting the recommendations of the EUFGIS workshop. One of the conclusions was that the information system should only include gene conservation units which already have a designated status as gene conservation areas or stands, recognized by appropriate national authorities or agencies. It is not necessary that the units have a legal status as not all European countries endorse gene conservation efforts by laws. An administrative status or other similar arrangement is enough with clearly defined management requirements for the units (e.g. a basic management plan and management goals). The workshop also agreed that seed stands can be accounted as gene conservation units but only if they meet the minimum requirements.

The expert group started its work by reviewing the workshop outputs, the minimum requirements for conifers, scattered broadleaves and stand-forming broadleaves developed earlier by the EUFORGEN Networks and other existing data standards (e.g. descriptors for inventories of black poplar stands and basic inventory requirements for noble hardwoods). The first draft of the pan-European minimum requirements was developed based those requirements which are common to all species-specific requirements. The first draft of the data standards was mainly developed based on the descriptors for inventories of black poplar stands.

The draft minimum requirements indicate that each unit should have one or more tree species recognised as '*target species*' for gene conservation efforts. The units should be predominantly located in autochthonous tree populations but additional *ex situ* units can also be included if they represent well-adapted forests. Units of introduced tree species can also be included if they are established for conserving well-identified and differentiated characteristics from their original source populations. Regarding minimum populations size, a unit should have either 500 reproducing trees (widely occurring and stand-forming conifers and broadleaves), 50 reproducing trees (scattered conifers and broadleaves), 50 seed bearing trees (dioecious tree species with sexual dimorphism) or 20-50 reproducing trees (rare or endangered tree species in specific situations only). The expert group is still continuing its discussion on these requirements for the minimum population size. The draft document also gives guidelines for the management and monitoring of the units.

The data on the units will be collected at two different levels; general data on the units and more detailed data on each target tree species within a unit. In addition to the identification data of the units in each country, the data standards include geographical coordinates of the unit, minimum and maximum elevation within the unit, surface area, ownership, type and function of the unit and predominant silvicultural system. For each unit, climatic variables will be obtained based on the geographical coordinates using common sources and extrapolating methods. Additional fields are available for remarks (e.g. specific soil and other characteristics) and a list of non-target tree species growing within the unit.

The data standards on each target tree species include Latin name, the origin of the material, the total number of reproducing trees per unit, remarks on sex ratio (in case of dioecious species), age class distribution, the level of natural regeneration and distribution of the reproducing trees in the unit. Furthermore, the data standards include additional information on the stand(s) and a field to indicate why the unit was established (e.g. conserving the genetic diversity of the target species, specific adaptive traits or remaining individuals of rare/endangered species).

Several participants noted that it would be useful to include some additional data standards which are specific to many scattered broadleaves, such the name of a river system. J. Koskela informed that the next version on the pan-European minimum requirements and data standards will be circulated for comments to all EUFORGEN Networks during the summer. Subsequently, the EUFGIS expert group will discuss the feedback of the Networks at its final meeting in Slovenia in early October 2008.

Progress made in various countries

Central and Eastern Europe (Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia)

Poland reported that the National Gene Resources Conservation and Tree Breeding Programme (1991-2010) will be completed soon and that a new programme is under preparation for 2011-2035. The conservation part of the new programme includes five scattered broadleaved tree species (*Fraxinus excelsior*, *Prunus avium*, *Alnus glutinosa*, *Tilia cordata* and *Sorbus torminalis*). These species will be emphasized while selecting or

establishing seed stands, seed orchards, seedling seed orchards, plus trees and progeny plantations. No programme for progeny testing of scattered broadleaves has been started yet in Poland.

In Hungary, there is a need to strengthen the legal framework (e.g. Forest Act and Nature Conservation Act) for conservation of forest genetic resources. There have been disputes whether gene conservation units of forest trees should be under the Hungarian forest or nature conservation authorities. In the Czech Republic, the responsibility for maintaining the national register of basic materials, including identification and approval, has been transferred from the Forest Research Institute to the Institute of Forest Management. In Romania, a new national catalogue of forest genetic resources is expected to be completed in 2008. Furthermore, an amendment will be made for the National Act on forest reproductive material in 2008 and the number of provenance regions will be reduced. In Slovakia, the National Programme for Forest Genetic Resources (2005-2009) has been continuing its work with limited funding but it has managed to identify valuable genetic resources of scattered broadleaves.

Regarding inventories and gene conservation efforts, data on the distribution of some common species, such as common ash and wild cherry, is available in Poland and more inventories are needed for really rare scattered broadleaved species. In Hungary, field inventories and selection of candidate stands for gene conservation have been finished and they are now waiting for a formal recognition. National funding for *ex situ* conservation, earlier available until 2005, is now available for public bodies only. This has created uncertainty for maintaining many private Hungarian collections (black poplar in particular), which are not covered by any conservation policy. The Forest Research Institute of Hungary is carrying out field inventories of *Populus alba* populations. The Czech Republic reported that inventories have been carried out for *Acer pseudoplatanus*, *Alnus glutinosa*, *Pyrus pyraeaster* and *Malus sylvestris*, *Populus nigra*, *P. alba* and *P. canescens*. Slovakia is also continuing inventories and has made proposals for gene conservation units of scattered broadleaves as the current system of gene reserve forests in the country focuses largely on major stand-forming tree species.

Poland has made promotion of scattered broadleaved species in afforestation and reforestation compulsory and many of these species are protected in forest stands for ecological reasons. In Hungary, a review of the provenance regions was completed in 2007 and it proposed a reduction of the number of the provenance regions in the country. In Slovenia, the use of forest reproductive material of scattered broadleaves is increasing continuously. In the Czech Republic, new parent trees have been selected for *Acer pseudoplatanus*, *Alnus glutinosa*, *Prunus avium* and *Tilia cordata* while the number of *Ulmus* parent trees has decreased. In Slovakia, a national list of forest reproductive material was revised and published in February 2008. Similar revision effort is underway in Romania.

In Slovenia, there are several ongoing or planned research projects on genetic characterisation and conservation of scattered broadleaved species as well as on their silviculture. Habitat mapping and related modelling is also underway for *Fraxinus* species, *Populus nigra* and *Prunus avium*. Slovenia is also developing a monitoring system for genetic variability of trees in the natural and endangered habitats. In the Czech Republic, new trials

have been established for *Acer pseudoplatanus*, *Alnus glutinosa*, *Malus sylvestris*, *Populus nigra*, *P. alba* and *P. canescens*, *Pyrus pyraster*, as well as for *Betula*, *Fraxinus* and *Tilia* spp. Isozyme characterisation of *Ulmus* genotypes, including micropropagation, is also carried out in the Czech Republic. In Romania, *Prunus avium* and *Juglans nigra* have been characterized with isozymes as part of the COREGEFOREST project, which is lead by the national Forest Research Institute. The Faculty of Forestry in Brasov also has a project on ecological niches of *Acer platanoides*, *Alnus glutinosa* and *Fraxinus excelsior*. Slovakia has an ongoing marker-aided study on variation, taxonomy and reproduction of *Sorbus* species and another one on reproduction and progeny testing of *Fraxinus excelsior* and *F. angustifolia*.

As training and public awareness efforts, Hungary organized a COST-funded summer school on biomass production, including gene conservation issues. Several seminars have been organised for practical foresters by the Czech Forestry Society and Pro Silva Bohemica. In Romania, a national workshop on *ex situ* gene conservation was organized by the Forest Research Institute. In Slovakia, selected EUFORGEN Technical Guidelines have been translated into the Slovak language. Several PhD studies on scattered broadleaves are also underway in many countries in the sub-group.

Mediterranean region (Bulgaria, Croatia, Cyprus, France, Greece, Italy, Portugal, Spain and Turkey)

One very important issue that was reflected in the individual country reports is a tendency for a greater importance of forestry in State matters. A restructuring of state authorities (Ministries) in a way that puts more prominence in forestry has been reported by Bulgaria, Croatia and Spain. Adoption of the 105/1999 EU Regulation has been advanced in Croatia, Italy and Turkey.

Some countries have started working on national inventories of provenance tests while at the same time data are (re)analysed under the notion of climatic change (France, Italy, Spain). A discussion as to why genetic diversity and protection of genetic resources are relevant in the climatic change research is under way in France. A relevant workshop on the plasticity and adaptation of forest trees has been taken place in Spain.

Various research activities regarding selection of potential GCUs, clonal selection and characterization, provenance and seed orchards, climatic change effects and other research, has taken place regarding numerous scattered broadleaf genera. In particular relevant research has been taking place regarding *Acer* (Bulgaria, Italy), *Arbutus* (Bulgaria) *Fraxinus* (Croatia, Italy), *Juglans* (Italy), *Liquidambar* (Turkey), *Pirus* (Bulgaria, Spain), *Populus* (Croatia, Italy), *Prunus* (Bulgaria, Croatia, Greece, Italy, Spain), *Sorbus* (Bulgaria, Italy, Turkey), and *Ulmus* (Croatia, Italy, Turkey).

Short rotation intensive culture plantations (mainly poplar and willow) are gaining notable importance in the biomass for energy sector. Relevant discussions are taking place in France. A small project regarding evaluation of poplar and willow biomass plantations Austria, Bulgaria, Croatia, Greece Romania, Serbia and Slovenia is about to commence. The importance of recording and conserving genetic diversity in this sector is being stressed.

Efforts to advance the “genetic level” of biodiversity evaluation, mainly through the genetic characterization of gene conservation related plant material are taking place in France, Greece and Spain. The loss of genetic diversity from the point of seed collection to the definite establishment of a new plantation is being studied in France and Italy. Discussions with seed traders on the above matter (in the aim of future training of nursery personnel) have also been established.

Public awareness activities regarding gene conservation are taking place in France (leaflets, books, literature reviews) and Spain (translation of EUFORGEN publications in Spanish, publication of the national gene conservation strategy) with great success. Dissemination and publicity regarding EUFORGEN activities are being used to instigate awareness and action at national and regional level in Greece and Portugal where state funding regarding the protection of forest genetics resources is scarce or absent.

Northern Europe (Denmark, Finland, Iceland, Lithuania, Norway and Sweden)

In January 2008, the new Nordic Genetic Resource Center (NordGen) was established by merging the Nordic Gene Bank (NGB), Nordic Gene Bank Farm Animals (NGH) and Nordic Council for Forest Reproductive Material (NSFP). NordGen operates under the Nordic Council of Ministers and it continues the earlier cooperation on plant, farm animal and forest genetic resources among the Nordic countries. NordGen–Plants is located in Alnarp, Sweden while NordGen–Farm Animals and Forest operates from Ås, Norway. The Nordic FGR Network within NordGen–Forest is preparing an evaluation on legal status of FGR in Nordic countries (related to access and benefit sharing issues).

Denmark reported that the GENE CAR project will organize a workshop on genetic resources of scattered trees and scrubs in Sorø, Denmark in September 2008. This project focuses on perennials used for landscaping and shelterbelts and it addresses both conservation and utilization. Denmark is also looking for partners for the future co-operation on minor scrubs. Another GENE CAR meeting on vegetative propagation of conifers will be organized in Punkaharju, Finland in October 2008. Denmark also reported that many trees of *Fraxinus excelsior* are suffering from a fungal disease and that studies have shown it is partly under genetic control. The Danish *ex situ* programme has collected seed of *Acer pseudoplatanus*, *A. platanooides*, *Betula pendula*, *B. pubescens* and *Prunus avium*.

In Norway, a new two-year plan has been adopted for field work on several tree species to identify gene conservation units within natural reserves and to provide necessary data for the development of the common action plan as well as the EUFGIS information system.

Lithuania has started new work on *Carpinus betulus* by selecting 40 plus trees and initiated seed collection and establishment of provenance trials for the species. The country has also established seed orchards for *Malus sylvestris*, *Pyrus pyraeaster* and *Tilia cordata*. A seed stand has also been selected for *Ulmus laevis*.

In Finland, the management responsibility of the forests earlier owned by the Finnish Forest Research Institute (Metla), including gene reserve forests, has been moved to the State Forest

Service (Metsähallitus). This will have several implications for the practical implementation of the gene conservation of forest trees. It was also reported that this year was a good seed production year for *Tilia cordata* in Finland with high germination rates.

Iceland reported that new work on *Betula* spp. is being considered while research efforts on *Populus tremula* and *Sorbus aucuparia* are quite limited. The Agricultural University has started to educate students in forestry at B.Sc. and M.Sc. levels.

Western Europe (Austria, Belgium, Germany, Ireland, Netherlands, Switzerland and United Kingdom)

Three projects on scattered broadleaves were completed in Germany; the rehabilitation of floodplains in the Oder valley with *Populus nigra* (2007), the evaluation and documentation of genetic resources of *P. nigra* and elm species (2007), and a pilot study on genetic monitoring of *Prunus avium* using microsatellites (2008). In Switzerland, funding was available for identifying gene conservation units of all scattered broadleaved species. Furthermore, a Ph.D. project on the genetic structure and gene flow of *Sorbus domestica* has been completed in Switzerland.

In Belgium, the work on *Fraxinus* spp. will continue following the EU-RAPT project as this may give some insight for transferring genotypes under climate change (50 genotypes of ash were planted in seven countries as part of the project). Also in Belgium, a new project will test for autochthonous populations of *P. avium* using the prevalence of incompatibility mechanisms in the populations. In Ireland, a new project to identify suspected hybrid ash (*F. excelsior* x *F. angustifolia*) and the hybrid's potential for genetic pollution of indigenous ash germplasm has begun. In addition, the establishment of a new database on field trials will include previous and current research on scattered broadleaves.

Regarding publications, the Federal Ministry for Food, Agriculture and Consumer Protection of Germany published a strategy paper on the conservation and sustainable utilisation of biodiversity in agriculture, forestry and fisheries. Handbooks for the establishment of flood plain forests (2007) and for the genetic monitoring of forest tree species (2008) have also been published in Germany. The Netherlands published an updated national seed catalogue which provides lots of certified material for use ('source identified'). The Forestry Commission in the UK has published an information note on the role of genetic resources in moderating the effects of climate change on forests. This note will be translated into French and Spanish. In Ireland, an outline strategy for sustaining and developing Ireland's forest genetic resources was published by COFORD.

In Austria, the *P. nigra* collection was regenerated according to the technical notes. One new gene conservation unit has also been established with some *S. torminalis* occurring throughout it. Belgium reported that seed orchards have been established for 23 species, one of which is for scattered broadleaves. The country has also included shrubby species in their gene conservation efforts. In Ireland, a clonal genebank for *Alnus glutinosa* has been established with 83 genotypes which were selected based on their timber quality. There are plans to increase the number of clones conserved based on geographical factors.

The 9th Conference of the Parties (COP9) of the Convention on Biological Diversity (CBD) was held in Bonn, Germany in May 2008. Prior to it, Germany also organized a national conference 'Genetic diversity – a chance for the forest'. In addition, *Juglans regia* is a tree of the year for 2008 in Germany. This offers opportunities for tree planting, scientific conferences and excursions in relation to the species.

Progress made in other Network activities

Review of methods for genetic monitoring (M. Rusanen)

M. Rusanen presented a draft document on methods for genetic monitoring. She noted that this initiative is rather ambitious and that genetic monitoring methods are usually costly to implement in practice. She also mentioned that the working group would appreciate receiving feedback and that it should be clarified what is the scope of the monitoring efforts.

It was pointed out that long-term genetic monitoring by comparing new and old results can be difficult as marker technologies are improving continuously. It was suggested that monitoring efforts should include collection of samples to be stored in silica for future studies. The monitoring work could also be based on model tree to create an early warning system. Several participants noted that monitoring regeneration might be more urgent and that the monitoring methods should be kept as simple as possible. It was concluded that the genetic monitoring should focus on the gene conservation units instead of forest management in general as there are already several frameworks proposed for genetic criteria and indicators as part of monitoring sustainable forest management. It was agreed that the Network members should comment the draft document so that it can be presented to the Steering Committee for further discussion.

Publication on forest restoration with scattered broadleaves

B. Heinze provided an update to the development of the publication. He informed that the working group contacted several potential authors and gathered some information on relevant restoration projects in Europe. However, he noted that most of the existing experiences and projects do not address the genetic aspects of forest restoration. Furthermore, recently several publications on various restoration methods have already been published.

Considering these difficulties, J. Koskela suggested that the working group could develop a chapter on genetic aspects of forest restoration with scattered broadleaves to the EUFORGEN publication on forest management and FGR to which all Networks will provide inputs. The working group agreed with this proposal and a new schedule for this task was adopted (see the updated work plan below).

Development of Technical Guidelines

M. Bozzano updated the participants on the development of Technical Guidelines for scattered broadleaves. *Alnus cordata* is ready for layout finalization, *Populus alba* still needs some revision and the text on *Juglans regia* is under finalization. The Secretariat will follow up with the authors and will help them to finalize the Technical Guidelines. He also highlighted the efforts made by several countries in translating the Technical Guidelines into their national languages (e.g. Dutch, Italian and Spanish).

Public awareness leaflets

M. Bozzano continued by presenting a draft version of the public awareness leaflet for *Ulmus* spp. The text was developed by E. Collin and the Secretariat has developed the layout of the leaflet following the style of the EUFORGEN leaflet. During the previous meeting in the Netherlands, the Network also agreed to develop similar leaflets for *Prunus avium* (B. De Cuyper) and *Malus-Pyrus* (D. Pandeva and L. Nagy). The schedule for finalizing the leaflets was agreed as part of the work plan discussions.

Seminar on genetic variation in marginal populations of scattered broadleaves

The Norwegian Genetic Resource Centre and current genetic research at the Norwegian Forest and Landscape Institute

T. Skrøppa started his presentation with an introduction to the Norwegian Genetic Resources Centre and its activities. The new centre was established in 2006 by merging four organizations which earlier dealt with genetic resources into one (i.e. Norwegian Genetic Resource Council and Committees on Farm Animal, Plant and Forest Tree Genetic Resources). The Genetic Resource Centre is one of the departments of the Norwegian Forest and Landscape Institute with four employees and an annual budget of NOK 9.5 million (approximately 1.2 million Euro) in 2008. The Centre serves as a secretariat for the Council and the three Committees and contributes to the implementation of the national programmes. It also advises the Ministry and other authorities, participate in international activities and administrate various activities and projects, including research on genetic resources. At the end of his presentation, T. Skrøppa highlighted the genetic research of the Norwegian Forest and Landscape Institute. The current work is focusing on the molecular basis of adaptive traits in Norway spruce (by identifying genes that regulate bud burst) as well as epigenetic studies and breeding in Norway spruce.

Genetic structure of marginal tree populations: What do we know and why should we know?

T. Myking started his presentation by showing how various tree species colonized Scandinavia after the latest glacial period, leading to the present distribution of the vegetation zones. He also discussed two contrasting theories on tree migration, i.e. the gradual expansion of forests with continuous and the satellite expansion theory with

profound founder effect. He then highlighted some research results on how the genetic diversity of the marginal populations of hazelnut, oak, English yew and Norway maple in Scandinavia differs from other populations in Europe. As consequences for gene conservation, he stressed that the marginal tree populations are more inbred and that they have less genetic variation and lower allelic richness. They are also more differentiated and more adapted to harsh conditions.

He concluded that there appears to be North-South pattern in genetic variation and differentiation in many tree species, and questioned the implications of this for gene conservation and development of the common action plans in particular. He also called for more studies with powerful markers and a need to collect more geo-referenced data.

Spatial and temporal genetic variation in tree populations in the northern margin: What can we learn from Norway spruce?

M.M. Tollefsrud delivered a presentation on molecular genetic diversity of Norway spruce in relation to its colonization history. First she presented some results on the genetic diversity and migration routes of Norway spruce based on mitochondrial DNA and fossil pollen data. The genetic diversity within Norway spruce populations is high in the Russian plains as they were refugial regions. High levels of genetic diversity was also found in the Baltic States, the Karelia region and southern Scandinavia while low genetic diversity was observed in northern Scandinavia and western Finland. The genetic differentiation between populations was low in the Russian plains but it increased towards to the Baltic Sea. She noted that this result is in line with pollen data suggesting several early dispersal events.

As part of another study, M.M. Tollefsrud analysed Norway spruce populations with nuclear microsatellite markers to find out how the differentiation among populations is distributed geographically from the refugia in Russia to the marginal populations in Scandinavia. She found out that the microsatellite diversity did not decrease significantly when moving from the refugia westwards and that the Baltic Sea did not act as a barrier to gene flow during the postglacial colonization of Norway spruce.

Finally, she showed results of her third study on paternal introgression from Siberian spruce to Norway spruce. The distribution ranges of the two species overlap on both sides of the Ural Mountains. Her results suggest that the Ural Mountains have acted as a strong barrier to seed flow but not for the pollen flow. Furthermore, it seems that the pollen flow from Siberian spruce has affected all northern Fennoscandinavian populations of Norway spruce.

In situ and ex situ conservation measures for the endangered *Malus sylvestris* in Flanders

K. Vander Mijnsbrugge presented the results of a Belgium study on *Malus sylvestris* (crab apple) and its distribution, introgression and conservation strategies in Flanders. Crab apple is a native tree species in Europe and it is endangered in many countries not only by habitat destruction but also by introgression from the omnipresent cultivated apple (*M. domestica*). Since crab apple and domesticated apple are closely related, hybridization can be

detrimental for the long-term survival of the *M. sylvestris*. She showed how pure and hybrid crab apples can be identified based on morphological characteristics. She is also presented the distribution of pure and hybrid crab apples in Flanders, based on earlier microsatellite studies. These studies have shown that the genetic diversity of crab apple is very high and that there is very little self-pollination. In Flanders, no geographic structure has been found among crab apple populations but tree within a stand can be significantly related up to 50 meter distance.

She then showed what kind of *in situ* and *ex situ* measures have been taken to conserve the genetic resources of crab apple in Flanders. Several *in situ* units have been established in state-owned forests but the presence of hybrids and closed canopies create some problems. Hybrids have been cut and dense stands been thinned to favour crab apple but this is not possible in those units which are located within forest reserves where no management is allowed. Enrichment plantings of crab apple are also planned. As part of *ex situ* efforts, a seed orchard has been established with grafted pure crab apples (132 genotypes, a total of 217 trees) in Dentergem, western Flanders.

Genetic variability of Prunus avium provenances in Casentino, Italy

F. Ducci presented the preliminary results of a work on wild cherry (*Prunus avium* L.)¹ that is currently being finalised.

Wild cherry populations were sampled all over Italy, to assess their genetic variability. In addition, most of these populations were also used to start an improvement programme aimed at selecting basic material for the nursery system and for plantations and intensive forest tree farming. A total of 29 Italian populations were analysed with SSRs and their genetic structures were compared. A multivariate analysis with genetic, morphological and phenological data was carried out for all populations. One of them, *Foreste Casentinesi* provenance, in central Italy (latitude 43°N), turned out to be peculiarly interesting, due to its diversity and studied at genetic structure level and for improvement and breeding. The results show: (i) poor genetic structure; (ii) the individual variance component prevails on differentiation among populations (iii) the provenances from Tuscany are not genetically related (iv) it was possible to identify three main wild geographical groups in Italy: northern, central and southern ones (v) the *Foreste Casentinesi* provenance, isolated from the others, is also subdivided in five sub groups.

F. Ducci concluded that the low genetic and ecological similarity among the populations could be due to physical barriers, the short-flying pollinators and the human intervention.

¹ F. Ducci, A. De Rogatis, S. Guerri (C.R.A. – Arezzo, Italy) and P. Belletti, D. Ferrazzini, I. Monteleone (Di.Va.P.R.A, University of Turin, – Grugliasco, Turin, Italy), from the Italian Ministry of Agricultural, Food and Forest Policies Project Riselvitalia 1.1 “Biodiversity and the Forest Reproductive Materials chain”, www.riselvitalia.it.

Determination of genetic diversity and gene conservation strategies for Liquidambar orientalis populations in Turkey by molecular markers

M. Alan presented results of a study on *Liquidambar orientalis* (oriental sweet gum) which is threatened by grazing, habitat destruction and unsustainable harvesting of oil (balsam). In Turkey, the area of *L. orientalis* forests reduced from 7000 ha (1940) to 3200 ha (2001), and subsequently the annual balsam production decreased from 180 to 5 tons during the same period.

Genetic diversity of *L. orientalis* populations was investigated by means of RAPD and chloroplast markers. A total of 18 populations were selected for the study from all over the distribution area of the species and leaf samples were collected from 25 trees from each population. The study showed that genetic diversity was low among the populations and that the populations were differentiated considerably from each other. Eight populations were selected due to high genetic diversity values and differentiation in minimum spanning tree. Therefore an *ex situ* unit was established representing those eight populations. The *ex situ* unit complement the *in situ* efforts consisting of four gene conservation forests (75 ha). Turkey also have one seed orchard (2.2 ha) and two seed stands (43.8 ha) for *L. orientalis*.

Discussion on climate change and its implications for gene conservation of scattered broadleaves

During this session, the meeting participants brainstormed on the impacts of climate change on gene conservation of scattered broadleaves in Europe. Firstly, it was concluded that there is still a need to improve our knowledge on the consequences of climate change. In this regard, many participants stressed the importance of common garden experiments to obtain better data on plasticity of tree populations and to identify which tree populations are most vulnerable to climate change.

Regarding conservation strategies and priorities, it was noted that attention should be paid to all scattered broadleaved species although better data and thus understanding on the likely impact are only available for some of the species. It was also pointed out that *in situ* gene conservation units should be selected carefully and that establishment of dynamic *ex situ* units should complement the *in situ* efforts, when needed. Moreover, many participants stressed that *ex situ* conservation may be the only option for endangered and/or marginal tree populations. Therefore, there is a need to develop methods for dynamic *ex situ* conservation (sampling and establishment protocols, for example).

It was highlighted that forest trees in general are probably more resilient to climate change than what is predicted. Gene conservation should not focus on genes as such but genetic processes which are driving evolution. *In situ* units should be large enough for those species which are dependent on metapopulation dynamics for the long-term survival and this is important to take into account even without considering climate change. It was also suggested that EUFORGEN should reinforce collaboration with ecologists promoting habitat and species conservation.

Several participants commented that it is also important to disseminate relevant information on forest genetic resources and climate change to forest owners and managers. It was recognized that the Forest Management Network is already active in this regard but that this Network should address scattered broadleaves in particular. The recent Information Note of the Forestry Commission in the UK, written by J. Hubert and J. Cottrell, was mentioned as a good example of such efforts. In conclusion, the participants felt that climate change is a very important topic which should be addressed during a possible new phase of EUFORGEN.

Updates on poplar databases

European database of Populus alba

E. Notivol briefed the participants on the European database of *Populus alba* which is maintained by CIFOR-INIA in Spain. No significant changes have taken place in the database recently. The database is available online using the same passwords as the *P. nigra* database at: <http://webainia.inia.es/albanet/albanet.php>

European database of Populus nigra

On behalf of L. Vietto, M. Bozzano gave an update on the European database of *Populus nigra* which is maintained by CRA-Unità di Ricerca per le Produzioni Legnose Fuori Foresta in Italy. The number of entrees has not increased since the previous Network meeting in 2006. It was noted that several data records are incomplete with missing information on certain fields, such as 'river system', for example. The database is available at: <http://www.populus.it/nigranet.php>

Updates on relevant projects and initiatives

TREEBREEDEX

B. De Cuyper presented an update to the activities of the TREEBREEDEX project which is a Co-ordination Action funded by the EC 6th framework programme for research. The project was launched on 1 June 2006 for a period of four years with 28 partners from 19 countries. TREEBREEDEX is coordinated by Luc E. Pâques at INRA-Orléans in France. The main aim of the project is the creation of a Virtual Tree Breeding Centre which will act as a scientific, technical and training platform for forest tree breeders and geneticists. The project objectives, tasks and deliverables are clustered into six activities, each one of them coordinated by two consortium members. For each activity, B. De Cuyper presented an overview of the objectives and the achievements so far, as well as the future work plan. Further information is available at the TREEBREEDEX Website at: <http://treebreedex.mediasfrance.org>

Austrian biomass project with southeastern European countries

B. Heinze informed the participants on a new project titled as 'Increased biomass production with fast-growing tree species in short-rotation forestry: impact of species and clone selection and socio-economic impacts'. The project is part of the research cooperation between Austria and South-Eastern Europe, supported by the Federal Ministry for Science and Research of Austria. It will start in June 2008 and continues until the end of March 2009. The project will prepare country reports on clones and species used in short-rotation forestry in Bulgaria, Croatia and Slovenia. Furthermore, it will organize a workshop in Sofia, Bulgaria in November 2008 and carry out comparative evaluation of biomass production potential of short-rotation forestry (from the biological point of view).

EVOLTREE

J. Koskela provided an update on the EVOLTREE project (EVOLution of TREEs as drivers of terrestrial biodiversity) which is a consortium of 25 partner institutes from 15 European countries. It is coordinated by A. Kremer (INRA, France) and funded by the EC under the 6th framework programme for research. EVOLTREE has established a repository centre of genomic resources at the Austrian Research Centers GmbH in Seibersdorf, Austria. The repository centre is a centralized and automated storage unit for genomic resources to guarantee safe and long-term storage of the material, such as genomic DNA extracts, EST libraries (expressed sequence tags, i.e. short strands of DNA that can act as identifier of a gene) and BAC libraries (e.g. artificial chromosomes) of trees and species associated to trees. EVOLTREE has also linked seven intensive study sites in Europe (i.e. large-scale ecosystem plots) for long-term research efforts on the evolution of biodiversity at different hierarchical levels (from genes to ecosystems).

He then highlighted some dissemination activities of the project (e.g. its Web site, publications and newsletter). EVOLTREE has also established a stakeholder group to enhance dialogue between them and EVOLTREE scientists. The first meeting of the stakeholder group was held in Nice-Mandelieu, France on 7-8 February 2008 in conjunction with the second annual meeting of EVOLTREE. The meeting discussed the benefits of integration in forest genomic research in Europe, verification of the origin of timber and forest reproductive material based on molecular markers, adaptation of forest trees to climate change, and the use of genomic approaches in forestry for bioenergy production. Further information on EVOLTREE is available at: <http://www.evoltree.eu/>

Finalization of the work plan of the Network (by end of Phase III of EUFORGEN)

Under Objective 1 (gene conservation and sustainable forest management), it was agreed that the Network will develop a review article on using genetic resources of scattered broadleaves in forest restoration for the EUFORGEN publication on forest management and forest genetic resources.. The working group will be lead by B. Heinze and the other members are E. Notivol, A. Vanden Broeck, L. Vietto, M. Bozzano and M. Villar. Other Network members who are interested in contributing to the article are welcome to join the

working group. The working group should develop a new outline of the article by **30 June 2008** and then request again other Network members to send them relevant examples by **15 September 2008**. The working group will finalize a draft of the article by **21 December 2008**.

Regarding the CAP work under Objective 2 (gene conservation), the participants agreed that a report on the selection of the proposed units will be included in the minutes of the meeting. Those Network members who have not yet proposed any units should send their proposals to the CAP groups (1-5 units per species and per country) by **15 September 2008**. Selection of additional units is then made by the CAP groups by **15 October 2008**. The Secretariat will develop an outline of the CAP publication by **30 July 2008** and each CAP group should then develop a draft chapter on the two tree species by **21 December 2008**. The work of the CAP groups will continue to be lead by B. De Cuyper (Group 1), E. Collin (Group 2) and R. Brus (Group 3).

All Network members should provide comments to the draft document on methods for genetic monitoring. The comments should be sent to the working group (F. Aravanopoulos, F. Ducci, M. Rusanen, R. Longauer, E. Notivol, J.S. Jensen, T. Myking, M.C. Varela and C. Koziol) by **30 June 2008**. The group should then develop the final version by **the end of December 2008** and it will be forwarded to the Steering Committee for further discussion.

The Technical Guidelines for *Alnus cordata* (F. Ducci), *Juglans regia* (F. Ducci, K. Russell, M. E. Malvolti) and *Populus alba* (I. Palancean, N. Alba and S.M.G. de Vries) will be finalized during autumn 2008. The Secretariat will finalize the layout for *A. cordata* in **31 July 2008** and help the authors to develop the final text for *J. regia* and *P. alba* by **30 September 2008**.

The leaflets targeted to general public on poplars will be made available on the EUFORGEN Website and the Secretariat will finalize the new leaflet on *Ulmus* spp. by **31 July 2008** based on the feedback received during the meeting. For the other leaflets on *Prunus avium* (B. De Cuyper) and *Malus-Pyrus* (D. Pandeva and L. Nagy), the authors should send a draft text and a photograph to the Secretariat by **1 October 2008**. The Secretariat will then circulate the draft leaflets for comments to all Network members.

Under Objective 3 (information dissemination), the Network members can send short news (1-2 pages of text with a photograph) on relevant national efforts on FGR to the Secretariat which will then publish them on the EUFORGEN Website.

Any other business

The participants concluded the meeting by expressing a need to continue the work of the Network along the lines of the new work plan and on issues raised on the impacts of climate change after the current Phase III. P. Aravanopoulos and P. Rotach offered to host future Network meetings in Greece and Switzerland, respectively.

With no other business, B. De Cuyper closed the meeting.

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