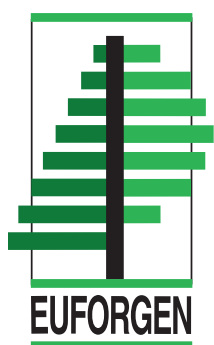




Scattered Broadleaves Network

Summary of the second meeting

Valkenburg, The Netherlands, 21- 23 September 2006



European Forest Genetic Resources Programme (EUFORGEN)

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Summary of the meeting

Opening of the meeting

S. de Vries, the local organiser of the meeting, welcomed the participants from 30 countries to The Netherlands and introduced E. Knegtering of the Ministry of Agriculture, Nature and Food Quality, Department of Nature (LNV). E. Knegtering then delivered the opening address of the meeting and gave a presentation on the Dutch biodiversity policy on genetic resources. He highlighted the efforts done to develop appropriate legislation and guidelines for a comprehensive programme on conservation and protection of autochthonous species in the country.

B. De Cuyper, Chair of the Network thanked the organizers for the meeting arrangements and welcomed the participants to the meeting. He also introduced A. Tullus, A. Urushadze, V. Schneck, F. Aravanopoulos and A. Gugala as new Network representatives from Estonia, Georgia, Germany, Greece and Poland, respectively.

J. Koskela presented the tentative agenda of the meeting which was then adopted. R. Longauer, E. O'Connor, D. Kajba and M. Rusanen were nominated as rapporteurs for the meeting.

EUFORGEN update

J. Koskela welcomed the participants on behalf of the EUFORGEN Secretariat and provided an update on the implementation of IPGRI's new strategy, the MCPFE process (Ministerial Conference on the Protection of Forests in Europe) and various EUFORGEN activities.

IPGRI's new strategy builds on the Millennium Development Goals adopted by the United Nations in 2000. The strategy reflects a broader focus on agricultural biodiversity, including forest biological diversity and emphasizes the use of biological diversity for alleviating poverty and improving livelihoods. It also addresses issues such as nutrition, health, shelter, water, environment and sustainability. The Institute has a new internal structure now and J. Koskela introduced the four new Programmes (Diversity for Livelihoods, Understanding and Managing Biodiversity, Commodities for Livelihoods and Global Partnership) as well as the new Research and Support Units (Policy, Capacity Development, Public Awareness and Information Management and Marketing). The EUFORGEN work continues as part of the activities of the Regional Office for Europe despite these changes.

J. Koskela mentioned that the MCPFE meetings that have taken place after the previous meeting of the Scattered Broadleaves Network in Denmark (the annual Expert Level Meeting in Warsaw on 5-6 September 2005, and the Round Table Meeting in Wroclaw on 24-25 April 2006) have already started discussions and preparations for the next Ministerial Conference. It has been discussed that the theme of the Conference, to be held in Warsaw in late 2007 or early 2008, could be forests and water. Other important issues in the agenda of the Conference are likely to be biomass and energy, adaptation of forest management and forests

to climate change, and forest law enforcement and governance. The discussions will continue during this year's Expert Level Meeting in Warsaw on 9-10 October.

A total of 32 countries have officially signed the agreement to join EUFORGEN Phase III including four new member countries (Georgia, Greece, Moldova and Romania). Some of the old member countries are still finalizing the official process and the EUFORGEN Secretariat is continuing discussions with several potential new member countries.

J. Koskela reminded the participants of the objectives of Phase III and highlighted the activities discussed under each objective during the previous Network meeting in Denmark. He also explained the background and purpose of the 'common action plan' concept for the benefit of new participants. He further mentioned that the Technical Guidelines are now nearly finalized for white poplar (*Populus alba*) and Italian alder (*Alnus cordata*). The development of the TG for walnut (*Juglans regia*) is still underway. He also displayed the present versions of the distribution maps of the three species. For further discussions during the meeting, he then highlighted what activities other EUFORGEN Networks have included into their work plans.

He also updated the Network that two proposals on forest genetic resources were submitted in September 2005 to the European Commission under the first call for proposal of the Council regulation on genetic resources in agriculture (EC 870/2004). These were 'Establishment of a European information system on forest genetic resources (EUFGIS)' and 'Dynamic conservation and utilization of European elms (ELMPOPS)'. A third proposal was also being developed ('Dynamic conservation and use of native poplars in Europe (POPGIS)') but it was not submitted in 2005. In early June 2006, the EC announced that it had selected a total of six proposals, including EUFGIS. The end of June 2006 was also the deadline for the second call and two projects on FGR were submitted (ELMPOPS and POPGIS).

Finally, J. Koskela informed the participants that Canadian Forests Genetic Resources Program (CONFORGEN) were recently launched during the 30th Biennial Meeting of the Canadian Tree Improvement Association, held in Charlottetown on 24-29 July 2006. CONFORGEN aims at increasing collaboration on FGR among different provinces of Canada.

Progress made in various countries

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

The existing National Programme on forest genetic resources has been upgraded in Poland and new National Programme launched in Slovakia. National strategy for forest genetic resources has been approved in the Czech Republic. In Hungary, steps towards the national strategy have also been taken. Georgia reported a lack of policies taking into the account forest genetic resources. This has resulted in the cut-off of regular activities after the recent

institutional reform; external assistance in order to improve the current situation would therefore be appreciated in the country.

Progress has been made in the inventory and conservation of the genetic resources of scattered broadleaves, including the maintenance and enlargement of existing *ex situ* collections. Increased number of approved seed stands and establishment of seed orchards were also reported. In Hungary, a nature conservation project for the Tisza catchments could facilitate a more detailed inventory of local tree species and their genetic resources. In Romania, a country-wide project aiming at identification, characterization and mapping of forest genetic resources, including those of scattered broadleaves, was launched. In Poland, was initiated the characterization of noble hardwoods species. Three smaller projects targeting the habitat quality of tree species, conservation of black poplar, and genetic characterization of ash are being implemented in Slovenia, and another one aiming at minor *Sorbus* species in Slovakia. In Georgia, some work on forest genetic resources is being carried out as part a forest inventory, funded by a World Bank-funded forestry project.

Several PhD studies dealing with phenotypic and molecular characterization, testing of ash species, and genetic inventories of wild cherry and white poplar have been initiated. Courses on conservation of forest genetic resources have also been held in Slovakia, Slovenia and Romania.

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

The European legislation regarding the use of forest reproductive material (FRM) has been adopted by several countries (Bulgaria, Croatia, Italy, Serbia and Turkey). New strategies for the conservation of forest genetic resources have been launched in France and Spain (The Spanish strategy for the conservation and sustainable use of the forest genetics resources have been just approved by the official national committee and due to this event a national symposium about the topic was held on May with the participation of IPGRI and EUFORGEN representatives). In Spain, the EUFORGEN Technical Guidelines for *Populus nigra* have been translated and enriched with local important information. A national strategy for gene conservation is in preparation in Croatia.

Significant progress in the inventory and conservation of genetic resources were reported. Artificial gene conservation units for *Populus nigra* and *P. alba* have been established in Italy. Gene bank clones are being characterized with molecular markers and morphology in Italy for black poplar and wild cherry and in Greece for wild cherry. Important projects are being carried out in France where a survey for *Ulmus laevis* and *Populus nigra* populations is underway. Studies with molecular markers and observations of flowering phenology are included in the survey. A very large study on *Populus nigra* in the Loire River has been just started as well. It includes an inventory, an analysis of genetic diversity and public awareness efforts. Conservation related research is also taking place in Croatia in collaboration with Serbia and Slovenia regarding *Fraxinus angustifolia*.

Some countries have incorporated courses on the conservation of forest genetic resources to the university level education (Croatia, Greece and Turkey) while short intensive graduate courses are being offered in Spain. Nevertheless, education of middle level personnel is lacking in this respect in all countries.

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

Most countries reported that there was an issue with the distribution of *P. nigra* reproductive material under the FRM rules. Some infrastructure needs to be built into the system to accommodate this. Reduced resources, both funding and personnel, were also a common issue. The fact that the planting of trees for biomass does not come under FRM legislation was identified as an emerging issue. Belgium hosted a meeting of the COST Action E42 Growing Valuable Broadleaves. This group has started an inventory of improved varieties, acknowledging that their populations also contain important genetic diversity. Belgium has autochthonous material in nurseries for a number of species. This material will be available to end-users in two years time. In the Flemish region of Belgium, the Research Institute for Nature and Forest (INBO) acts as a focal point to liaise between seed suppliers, nurseries and tree growers and to coordinate the planning of efforts.

A 60 ha field genebank for the preservation of indigenous trees and shrubs was opened in The Netherlands in May 2006. This genebank will also be used as a seed orchard in the future. It was opened by a government minister, ensuring valuable coverage in the media. In Austria there are ongoing *in situ* and *ex situ* programmes for traditional hardwoods.

Two thirds of the *P. nigra* distribution map for Switzerland have been completed, but there are no funds to complete the inventory of the whole country. In Germany there is an ongoing project involving rehabilitation of a national park with *P. nigra*. A national report was completed concerning the activities in gene conservation in forestry in Germany between 2001 and 2004, and it will be published soon. *Betula pendula* and *Sobus aucuparia* provenance trials are being established in the UK. Belgium has established provenance trials of *Fraxinus* and the trials are replicated in a number of EU countries. They are particularly interested in identifying stable provenances that may offer some protection in the face of climate change. In Ireland, 87 clones of *Alnus glutinosa* have been collected from 18 sites. Also in Ireland, cuttings from 29 old-growth *Ulmus* have been collected. These Cuttings will be planted out at the end of 2006. Pressed samples of the material have been sent to The National Botanical Gardens for species identification and for preservation.

There has been some research on gene flow in *Sorbus domestica* in Switzerland, using this species as a model species. In Germany there is current work on the identification of genetic resources of *Ulmus* and *Populus nigra* and a model project started for genetic monitoring of *Prunus avium*.

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

There is an initiative to develop new organization for the collaboration on genetic resources among the Nordic countries. It will be also discussed how forest trees should be addressed in this context. In Norway, the new Genetic Resource Center has been established recently.

In Finland, the working group on the 'Access and benefit sharing of genetic resources' has finished its work and the outputs are now being evaluated. The re-organization of the administration of state forests is also expected to influence Metla's work on conservation of forest genetic resources in Finland. From Sweden was mentioned a recent review underlining the lack of information on genetic resources of many tree species. In Estonia, the concept of 'gene reserve forest' is being officially recognized in the forest legislation.

In Norway, efforts are being made in Svalbard to establish an international seed storage of mainly agricultural crops in an old mine (see 'Norwegian Genetic Resources Centre' below). In Sweden, smaller deciduous forest area than expected has been planted after the big windstorm of winter 2004. Subsequently, there have been initiatives to find out how to plant more deciduous forest. In Finland, threats to forest gene reserves by road building and mining is continuing; there is still a reason to work actively to protect forest gene reserves. Denmark reported continuing work on native tree species, i.e. collecting *Acer pseudoplatanus*, *Acer platanoides*, *Prunus avium* and *Malus* spp. A new post-doc project on elm has also been started to identify different varieties and the relation between the species. Although economic resources are limited in Iceland, some efforts have been directed to native tree species including rowan (*Sorbus aucuparia*). There is a plan to do some work on *Populus tremula* which is a rare species. More emphasis is still given to exotic species such as *Populus trichocarpa* in Iceland. In Lithuania, the best native *Malus silvestris* and *Pyrus pyraeaster* materials have been collected. Establishment of seed orchards is intended to stimulate planting of these species. In Estonia, most of the genetic work is done on *Betula pendula* aiming at selection of plus-trees. The deciduous species are being included in the programme on selection and conservation. Increased demand from the new pulp mill will attract attention in the future to diploid and triploid European aspen and hybrids *Populus tremula* x *tremuloides* in Estonia. *Alnus glutinosa* is under consideration for further project work and a limited work other species has been done in Estonia.

A website (<http://www.treogbusker.no/info.cfm>) with available seed sources for Norway has been created in April-May 2006 to promote well-adapted seed sources to the users. The end-users have been involved in the work and planning of the project. In Denmark, more attention has been given to web-based information systems to promote use of various species and provenances.

Development of common action plans for scattered broadleaves

Updates from the three Common Action Plan (CAP) groups

The three CAP group leaders (B. De Cuyper, E. Collin, R. Brus) gave an update on the work of the groups. Following the decisions taken at the Copenhagen meeting in 2005, the first CAP group selected *Fraxinus excelsior* and *Prunus avium* as its model species; the second CAP group selected *Populus nigra* and *Ulmus laevis* and the third one selected *Pyrus pyraeaster* and *Sorbus torminalis*. In the discussion, R. Longauer gave an update on practical limitations and chances to conserve gene resources of extremely scattered species on the example of *Pyrus pyraeaster*.

It was decided to complement the general Scattered Broadleaves table for descriptors proposed by Group 1 with a few selected descriptors taken from the earlier compiled descriptors for inventories of in situ stands of *Populus nigra* in 2000. Recommended additions are:

- River name and last level tributary name (*P. nigra* descriptors n° 26 and 27)
- Male and female trees are present in the stand: Yes/No (adapted from n° 38)
- Type of natural regeneration: Generative/Vegetative/Both/None (adapted from n° 39)
- Soil texture at upper 15 cm: (n°45)
- Occurrence of suitable conditions for regeneration: (n°47).

B. De Cuyper will compile a complete table for descriptors based on the agreements of this meeting and circulate this by **29 September 2006**. The Network members will send their comments back to B. De Cuyper by **13 October 2006** and the final table will be circulated by **20 October 2006** by the Secretariat. Information on candidate gene conservation units (GCUs) of CAP species (using the table for descriptors) together with half a page descriptive text should be sent to all members of respective CAP groups (see below) by **30 June 2007**. In cases where no candidate GCUs can be found, it is recommended to still send a message with explanation of the main obstacles. The CAP groups will screen the candidate GCUs and start the development of the CAPs. A short interim report will be finalised by **30 September 2007**. The draft CAPs will be finalised by **15 December 2007**. It was underlined the importance of copying the e-mail correspondence to the Secretariat in order to allow appropriate coordination.

The following groups have the responsibilities of developing the Common Action Plans for the given species; all Network members should supply information on all the species as needed and requested.

Group 1 (*Fraxinus excelsior*, *Prunus avium*): B. De Cuyper, M. Heuertz, M. Rusanen, J. Jensen, F. Ducci, A. König, T. Myking, K. Russell, E. O'Connor, S. Black-Samuelsson, V. Burianek, Cotterell, A. Tullus, A. Gugala

Group 2 (*Populus nigra*, *Ulmus laevis*): E. Collin/M. Villar, S. de Vries, L. Nagy, A. Vanden Broeck, E. Notivol, H. Haska, L. Vietto, M. C. Varela, C. Maestro, D. Kajba, H. Sverrisson, F. Aravanopoulos, B. Heinze, S. Orlovic.

Group 3 (*Pyrus pyraster*, *Sorbus torminalis*): R. Brus, P. Rotach, M. Alan, H. Konrad¹, R. Longauer, D. Pandeva, D. Raudonius, A. L. Curtu.

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Initiatives supporting development of the common action plans

Introduction to the EUFGIS project

J. Koskela provided the participants with an introduction to the EUFGIS project (Establishment of a European Information System on Forest Genetic Resources). The project was approved by the EC in the first call for proposals under the Council Regulation No 870/2004 on genetic resources in agriculture. The EUFORGEN Secretariat, following the request from the EUFORGEN Steering Committee, developed the project proposal in collaboration with partners in six countries (Austria, Denmark, France, Slovakia, Slovenia and the UK). The project aims at harmonising minimum requirements for dynamic gene conservation units of forest trees and common information standards at pan-European level, and creating a web-based, permanent information system on national inventories on forest genetic resources in Europe.

The role of the EUFORGEN Networks is to provide technical Backstopping and contribute to the harmonization of minimum requirements for gene conservation units of different trees species and development of information standards for these units. Once established, the proposed information system will benefit all Networks in their further efforts to develop the common action plans and assess the status of gene conservation efforts for various tree species in Europe.

All EUFORGEN member countries will be invited to participate in the project, which is expected to start in early 2007. The EUFORGEN National Coordinators will be asked to nominate a national focal point for the project. The focal points will receive training on FGR documentation and inventories as part of the project to compile national data for the information system. During the first year of the project, a European workshop on FGR documentation will be organized to discuss the present situation and to initiate the harmonization of the minimum requirements for gene conservation units across the EUFORGEN Networks.

ELMPOPS proposal (E. Collin)

E. Collin presented a brief summary of the ELMPOPS proposal (Dynamic conservation and utilization of European elms) co-ordinated by L. Gil (*UPM Madrid, Spain*). The proposal was first submitted in 2005 and then re-submitted in 2006 for the second call for proposals under the Council Regulation No 870/2004 on genetic resources in agriculture. The proposal aims at implementing the dynamic conservation of elm genetic resources across a large part of Europe, and facilitating the procurement of European elm material for landscape restoration. Partnership is composed of 12 contracting teams from 12 countries, and 18 additional partners participating on a voluntarily basis. A total of 23 European countries and the EUFORGEN Secretariat are represented in ELMPOPS. The ELMPOPS workpackages are:

- 1) Links to EUFORGEN and dissemination of results
- 2) Characterise genetic diversity and population structure using molecular markers
- 3) Select and construct populations for dynamic conservation

- 4) Complement the existing core-collection of clones
- 5) Select diverse and more resistant clones of European elms for landscape restoration.

The total budget of the project is € 1 million of which € 0.5 million is applied from the EC.

POPGIS project proposal

Lorenzo Vietto presented the POPGIS proposal (Dynamic conservation and use of native poplars in Europe) which was submitted to the second call for proposals under the Council Regulation No 870/2004 in June 2006. The proposal is coordinated by B. Heinze (Austria) involving 15 partners from Austria, Belgium, Bulgaria, France, Georgia, Germany, Hungary, Italy, Poland, Romania, Slovakia, Slovenia, Spain, The Netherlands, United Kingdom. Four external observers will be also involved (Croatia, Russian Federation, Turkey and Ukraine). These observers will try to set up self-funded projects in their respective countries. The participation of Georgia is considered of relevance because its presence extends the geographic range of the group; moreover the observers will act as role models and contact points for other non-EU and non-European countries and they significantly extend the range of expertise.

The main objective of the proposed action is to establish a European network of *in situ* gene conservation units of *Populus nigra* and *Populus alba* in order to improve their conservation at the European level, complementing the EUFGIS project. The proposed project also includes activities on public awareness and initiatives to promote the use of the native poplars genetic materials in agriculture, in breeding programs and in restoration activities.

The project will focus on inventories of natural *in situ* gene conservation units, characterization of the genotypes for inclusion in the gene banks and assessment of the levels of introgression, and inventories of the restoration projects across Europe.

P. nigra and *P. alba* are species with significance for the European Community and the full potential of the genetic resources of these species is not utilized. POPGIS should provide the necessary data and a ground stock of plant material to implement the sustainable use of poplars in Europe and to ensure successful long term conservation activities. Moreover POPGIS will contribute to the achievements of the EUFORGEN Phase III objectives, since a systematic inventory and a characterization of the *in-situ* native poplar genetic resources is the first step to develop common action plans.

Meetings, projects and other initiatives

TREEBREEDDEX: a working model network of tree improvement for competitive, multifunctional and sustainable European forestry

B. De Cuyper introduced the TREEBREEDDEX project, which is a Co-ordination Action funded under the EU 6th framework programme for research. The project was launched on 1 June 2006 for a period of four years. It is coordinated by L.E. Pâques from INRA, Orléans (France) with 28 partners from 19 countries.

Since more than 50 years, national tree breeding programmes have been developed in many European countries. Consequently, huge collections of trees and vast networks of

experimental trials have been built up for most economical important tree species. In addition, an original methodology has been developed to test, evaluate, select and mass-produce forest tree species. Together with specific equipment and facilities, this represents a unique infrastructure. However, reduction of manpower and funds results in loss of critical mass and in a reduced maintenance and/or follow-up of experiments. Moreover, sub-optimal collaboration between and ditto complementary of research teams inevitably leads to redundancy in research work and to doubling of efforts.

The TREEBREEDDEX project aspires to remedy this inadequate and ineffective situation by creation of a *Virtual Tree Breeding Centre (VTBC)*, which even beyond the project duration will create a key scientific, technical and training platform for forest tree breeders and geneticists. Furthermore, VTBC will act as a showcase and contact point for the forestry wood chain and stakeholders such as policymakers and the general public. The main objectives of the VTBC are;

1. to create meta-databases of tree breeding infrastructures (biological collections and facilities) and facilitate access to these infrastructures;
2. to enhance the exchange of information, knowledge and expertise through creation of a web-site and organisation of seminars, workshops, training sessions and visits of experimental facilities;
3. to set up methodological standards for design of trials and for assessment, storage and analysis of data; and
4. to identify gaps in knowledge and research needs.

The project is built around six work packages, each coordinated by two partners of the consortium;

1. Management of the project
2. Creation of a Virtual Tree Breeding Centre: *for a better integration, education and dissemination of forest tree improvement R&D activities*
3. Geographical structure of genetic diversity of species: *towards the delineation of adaptive environments and breeding zones at European level*
4. Structure, organisation and long-term management of forest tree breeding material: *towards a joint management of breeding populations*
5. Optimisation of breeding strategies: *networking breeders' experimentation tools and methodology for a joint development of breeding activities and genetic research*
6. Optimisation of improved variety mass-production and deployment in forests: *share of expertise for a more efficient dissemination of varieties.*

The kick-off meeting of the project will be organized in Orleans on 6-9 November 2006.

Norwegian Genetic Resources Centre

T. Myking introduced the new Norwegian Genetic Resource Centre, which was established in July 2006 by the Ministry of Food and Agriculture. The Centre is located at the Norwegian Forest and Landscape Institute and it will promote and coordinate sustainable use and conservation of genetic resources in farm animals, crop plants and forest trees. The budget for 2007 is € 1.2 million, and the Centre has four employees. The main task of the Centre is to elaborate and implement national programmes, which strongly relies on cooperation with

institutions and bodies outside the Centre. He also mentioned the recent establishment of an international seed store at Svalbard, a Norwegian tundra island in the Barents Sea. The storing is to take place in the caves (which have stable temperature) of the previous mining industry. The storing at Svalbard is exclusively for duplicate conservation of seed, a primary store has to be maintained elsewhere. It is still not yet decided whether seed of forest trees could be also stored at Svalbard.

EVOLTREE project

J. Koskela provided an update on the current state of the EVOLTREE project (EVOLution of TREEs as drivers of terrestrial biodiversity) which is funded by the EC under the 6th framework programme for research. EVOLTREE is a consortium of 25 partner institutes from 15 European countries and it is coordinated by A. Kremer (INRA, France).

The main aim of the project is to support integration of work on forest genomics in Europe by developing common research infrastructures and exchanging human resources. The project also includes jointly executed research activities and dissemination of research results and other relevant information. EVOLTREE associates four major disciplines – genomics, genetics, ecology and evolution – for understanding, monitoring and predicting genetic diversity, ecosystems structures, dynamics and processes. The functional role of trees as drivers of biodiversity is deciphered by investigating their adaptive diversity, their structuring role on diversity of associated species and their own evolutionary rate in response to biotic and abiotic environmental changes. The research activities will focus on selected model (*Pinus*, *Populus*, *Prunus* and *Quercus*) and target genera of broadleaves (*Acer*, *Alnus*, *Betula*, *Castanea*, *Carpinus*, *Corylus*, *Crataegus*, *Fagus*, *Fraxinus*, *Prunus*, *Salix*, *Sorbus*, *Tilia*, *Ulmus*) and conifers (*Picea*, *Abies*, *Larix*). In addition to trees, the scope of the project includes other species associated with forest trees (defoliating insects and mycorrhiza).

EVOLTREE started officially on 1 April 2006 and the kick-off meeting was organized in Bordeaux, France on 26-28 April 2006. The project has selected seven intensive study sites; Valais (Switzerland, alpine altitudinal gradient), Ventoux (France, Mediterranean altitudinal gradient), Solling (Germany, temperate forest), Puszcza Białowieska (Poland, untouched forest), Punkaharju (Finland, boreal forest), Loire (France, riparian forest) and Landes (France, intensively managed forest). The first EVOLTREE Symposium and Workshop on Community Structure and Dynamics will be organized in Marburg, Germany on 11-13 October 2006. A communication strategy is also under development to disseminate the results of the project to the scientific community, policy makers and general public.

Use of FGR in forest restoration/rehabilitation

Use of FGR in sustainable forest management in the Netherlands: case studies in Ulmus and Populus

J. Buiteveld presented the work that the Centre for Genetic Resources the Netherlands (CGN) is implementing on behalf of the Dutch Government. CGN conducts statutory research task associated with genetic diversity and identity of species that are important for agriculture and forestry. Its activities in forest genetic resources management are aimed at *ex situ* conservation, support for *in situ* conservation and promotion of the use of material in sustainable forest management. For the *ex situ* conservation of trees and shrubs CGN closely collaborates with the State Forest Service. In spring 2006, a new field gene bank for indigenous trees and shrubs was opened and it aims at including material of more than 50 species. In many of these species, molecular markers are used to support the management of their genetic resources. For example in *Ulmus* spp. and *Populus* spp. molecular markers are applied to refine the sampling strategy or to characterize the collection for getting better insight of the genetic diversity and for identifying duplicates. For *Ulmus minor* and *Ulmus laevis* the first results show that a substantial number of clones occur in the material sampled. No restoration projects in *U. laevis* or *U. minor* have taken place yet in The Netherlands but in the future seeds from the genebank/seed-orchard will be used for restoration of relict populations. An analysis with microsatellites of the black poplar collection showed that the extent of redundancy is high (46%) and that the efficiency of conservation can be improved. Reintroductions with gene bank material of black poplar along the main rivers have occasionally occurred in the past. For future restoration projects of riparian forests CGN will have better insight of the diversity and number of duplications in the black poplar collections so that it can better advise forest managers in choosing plant material for reforestation.

During the discussion following J. Buiteveld's presentation, it was noted that *ex situ* methods are essential for conservation in cases where *in situ* is not feasible due to species' biological characteristics, land management or other reasons. However, there are several technical problems to be solved, especially when huge number of species has to be addressed simultaneously. A proposal was made that EUFORGEN could promote a workshop on practical aspects of *ex situ* conservation.

A problem of duplicate accessions was discussed. In France, a protocol has been developed to detect clones of *P. nigra* through phenological observations M.Villar promised to distribute the protocol to the Network members.

Restoration of black poplar along the River Common Meuse

A. Vanden Broeck reported on the transboundary 'Common Meuse River restoration project' and the rehabilitation of black poplar populations. In frame of this project, the river dynamics will be restored and favourable conditions for black poplar regeneration will be created. The aim of the restoration project is to establish several stands that are able to produce seeds of such quantity and genetic quality that it is possible to initiate regeneration

and contribute to the evolution of local genetic resources of black poplar. Since 2002, several plantations of black poplar have been established near the river.

Updates on recent meetings

IPGRI-IUFRO workshop on forest genetic diversity and climate change

IPGRI and the International Union of Forest Research Organizations (IUFRO) organized a workshop in Paris on 15-16 March 2006 to discuss the role of forest genetic diversity in improving the adaptability of forests to climate change. The workshop was hosted by the French Ministry of Agriculture and Fishery and attended by nearly 80 participants from 25 countries. J. Koskela informed the meeting on the outputs of this workshop which was also part of the MCPFE Work Programme to implement Vienna Resolution 5 (Climate change and sustainable forest management in Europe).

The workshop recognized that the impacts of climate change on forests will vary in different parts of Europe, bringing along both threats and opportunities. Forest genetic diversity has an important role in maintaining the resilience of forest ecosystems to the threats (new pests and diseases) and in taking advantage of the opportunities (e.g. longer growing seasons in northern Europe). Genetic diversity and its appropriate use provide flexibility with respect to forest management and help to reduce risks.

The workshop recommended that management of forest genetic diversity should be better linked with national forest programmes. These programmes are already in place in most countries to facilitate continuous dialogue on forest-related issues between various stakeholders within and outside the forest sector. The workshop further recommended that forest management practices that maintain evolutionary processes of forest trees and support natural regeneration of forests should be promoted, especially in areas where long-term natural regeneration is self-sustainable despite of climate change.

The discussions also stressed that the adaptation of forest trees to climate change can be accelerated through tree breeding and transfer of potentially suitable reproductive material. Subsequently, the workshop recommended that the MCPFE process should endorse the development of pan-European guidelines for the transfer of forest reproductive material in Europe on the basis of scientific knowledge. The workshop also concluded that the impacts of climate change need to be analyzed in a holistic manner. European forest research community was urged to carry out more interdisciplinary studies (e.g. tree physiology, forest genetics, pests and diseases, forest management and economics, and modelling) on the impacts of climate change on forests with the support of the policy makers. The full summary report of the workshop is available at the EUFORGEN Web site (www.euforgen.org).

4th International Poplar Symposium

B. Heinze updated the meeting participant on the outcomes of the 'Fourth International Poplar Symposium Meeting: the Needs of a Growing World through Poplar and Willow Science - Combining Traditional and Novel Approaches in the Genomic Era'

The four thematic areas of the symposium included:

1. Advances and Applications in Poplar and Willow Genomics and Biotechnology,
2. Advances in Conventional Poplar Breeding and Gene Conservation,
3. Using Poplars and Willows to Provide Ecosystem Services and Bioenergy,
4. Poplars in a Changing World: Understanding Responses to Climate Change.

More information and details available at: <http://ips2006.njfu.edu.cn/eng/index.html>

Documentation and public awareness

European database of Populus alba

E. Notivol reported that the number of accessions and countries in the *Populus alba* database have not changed since the previous Network meeting. He also informed the meeting participants that the *Populus alba* 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

L. Vietto reported that currently the database contains information on 3320 accessions from 20 countries, even if only 13 countries provided data on their respective national collections. Other countries, such as Poland, Germany, Slovakia, are expected to join the database soon. There have been no significant changes in the database since the last updating carried out in 2005. The Italian collection is still the most representative one based on the geographic origin of the genotypes (clones from 26 countries, the number of clones could be reduced on the basis of a molecular work planned next year), while the French, Spanish and Turkish collections are the most representative ones based on the number of accessions.

It was agreed that new fields such as 'Type of sample' and 'Origin of the clone' will be added to the database structure. Integration of 'bisexual' and 'in vitro culture' to the existing fields of 'Sex' and 'Type of maintenance', respectively, were also endorsed.

The recent activities in maintaining the database included updating the Italian collection as well as 'Passport data' and 'General rules for compilation and updating'.

The software of the database has been modified and duplicated in order to make the database of *Populus alba* operational on the INIA Web site (see above). Both databases could be linked to the database of *Populus nigra*, *P. alba*, *P. ciliata* and *P. trichocarpa* collections under development in the United States (the action is coordinated by Brian Stanton, Greenwood Resources, Portland-Oregon).

An updated list of country contacts for the European databases of *P. nigra* and *P. alba* was circulated and checked by the participants during the meeting.

It was stressed that the original name of a clone should be used in the field 'original name'. The database will start using the UN Statistic Division three digit ISO ALPHA-3 codes for country names (<http://unstats.un.org/unsd/methods/m49/m49alpha.htm>).

Core collection of Populus nigra

L. Vietto also reported on the status of the *Populus nigra* core collection. At present 22 countries are represented in the core collection with a total of 44 genotypes. Latest entries are from Slovenia (collection site Dolenja Bistrica, Mura River) and Bosnia and Herzegovina (two hairy types, genotypes were collected along the Neretva River, province Hercegovacko-Neretvanska). Partial duplicates of the collection are installed in eight countries.

As a result of recent contacts with Georgia and the Russian Federation new entries are expected. Collaboration with non-attending and/or non-EU countries should be increased (Algeria, China, Moldova and Morocco). Currently 11 countries from Europe, three countries from North Africa and 16 countries from Asia are neither represented in the database yet.

The core collection's introduction text has been recently updated and it should also be updated to the EUFORGEN Web site.

Genetic monitoring

A draft paper on methods for genetic monitoring by A. König (Germany) was discussed and it was seen as a good basis for a broader review. Although, it was noted that creation of guidelines for genetic monitoring for several species is a huge task, Network members agree to develop recommendations on the use of the Gene Conservation Units for monitoring (protocols and guidelines regarding the use of GCUs, including climate change effects monitoring). The draft should be ready before the next Steering Committee Meeting and finalised before the next Network meeting.

Public awareness leaflets

S. de Vries presented a draft leaflet for *P. nigra* and *P. alba*. It was decided that this information sheet will be published in the EUFORGEN Web pages in A4 format. The text was approved as it is, but there is still need to improve the layout, including poplar leaves and distribution maps of the two species. In addition, there will be no empty column or logo in second page in the final version and more pictures should be used in the cover page. The fact sheet will be finalized by the Secretariat in consultation with S. de Vries.

It was also agreed to produce three new leaflets addressed to general public (*Ulmus* spp, *Prunus avium* and *Malus-Pyrus*). The draft text for *Ulmus* spp will be developed by E. Collin, B. De Cuyper for *Prunus avium*, and D. Pandeva and L. Nagy for *Malus-Pyrus*.

The three new leaflets (foldable following the style of the general EUFORGEN leaflet) should contain significant biological information, explain the need for conservation and provide a link to EUFORGEN. The illustrations (photos) should make it possible to recognize the species in the nature. The maximum length of the text is 500 words. The text should be send to the Secretariat by 31 March 2007.

Technical Guidelines

The Secretariat is currently supporting authors of three new Technical Guidelines (TGs), which are in the following stage:

Alnus cordata - Draft text will be circulated by **29 September 2006** and the feedback should be send to the Secretariat by **30 October 2006**;

Populus alba – the Secretariat will follow up with the authors to finalise the TG;

Juglans regia - The text is missing for the chapter on the guidelines for conservation and use. The Secretariat will contact M.E. Malvotti and ask if she is willing to contribute to the missing part together with the original authors.

M. Bozzano presented the first draft template for translating the Technical Guidelines. The template will consist of two different products (with two new ISBN numbers) for each TGs to be translated. The first one will be direct translation of the original six-page TG (keeping the original author and acknowledging the translators in the citation) and the second one will be a two-page publication with country specific information. The two-page sheet will have new author(s), i.e. translators, and it will be considered as a separate publication. It was suggested to add local contact information to the back page and local Web address on the bar on the front page.

Use of inappropriate FRM

It was agreed in the first Network meeting to collect examples of the inappropriate use of FRM for awareness purposes. Since the Secretariat had not received any examples from the Network members, it was discussed if this request should be repeated. The Forest Management Network is also collecting similar information. It was decided that the Network should continue collecting the examples and provide the information for the Forest Management Network. T. Myking volunteered to send a template for information collection to the Secretariat by 30 September 2006 Everybody should then send their examples to the Secretariat by **15 October 2006** so that they are available before the next Forest Management Network meeting (November 2006). After this, the collection of the examples should be considered as an ongoing task for the Network members.

Short news on relevant national efforts

The Network members were encouraged to send short news on relevant national gene conservation events to be published on the EUFORGEN Web site. The meeting participants suggested that the news could include updates on the *Populus nigra* inventory in Switzerland, the meeting of COST Action E42 in Belgium, the restoration project in River Loire, the outputs of the TREEBREEDDEX kick-off meeting, for example.

Updating the work plan of the Network

Under Objective 1 (gene conservation and sustainable forest management), the meeting participants agreed to develop a review publication on 'experiences on restoration projects with scattered broadleaves'. L. Vietto, A. Vanden Broeck, B. Heinze, M. Villar and E. Notivol volunteered to lead this effort. A short description of the review (objectives) should be finalised by **30 November 2006** and circulated to the Network members who should provide comments including possible contribution and suggestions for authors by **30 May 2007**. The task force will then finalise and circulate the table of content by **30 June 2007** and suggested authors will be contacted by **30 September 2007**. The publication should be ready for language editing by **30 September 2008**.

Under Objective 2 (gene conservation), It was decided to continue the development of common action plans (CAPs) for scattered broadleaves, (see above – page 5 - for details and deadlines) in addition was agreed that, once finalised the CAPs for the mentioned species (foreseen November 2007) the CAP groups will also start the development of CAPs for a second set of species (namely Group 1: *Acer pseudoplatanus*, *A. platanoides*, *Tilia cordata* and *T. platiphyllus* Group 2: *Populus alba* and *Ulmus minor*; Group 3: *Malus sylvestris* and *Sorbus domestica*) to be finalised **before the next Network meeting**. T. Myking will send a template for information collection on inappropriate use of forest reproductive material to the secretariat by **29 Sep 2006**; all Network Members will send relevant examples (if available) to the Secretariat to be forwarded to the Forest Management Network by **15 Oct 2006**. After that, All Network Members are encouraged to forward to the Secretariat any relevant information when available.

The Network will finalise the development of Technical Guidelines (TGs) for *Alnus cordata*, *Juglans regia* and *Populus alba*. The draft text will be finalised by F. Ducci, F. Ducci - K. Russell -M.E. Malvolti and I. Palancean - A. Nuria respectively. The TG for *Alnus cordata* will be circulated by **29 September 2006**, the TG for *Populus alba*. By **30 November 2006** and the TG for *Juglans regia* during **2007**.

It was also agreed to continue the review of methods for genetic monitoring and future use of the Gene Conservation Units. It was agreed that M. Rusanen, R. Longauer, E. Notivol, J. S. Jensen, T. Myking, M. C. Varela and F. Aravanopoulos will develop the first draft to be presented at the next Steering Committee Meeting and finalised before the next meeting. All Network members will be called to provide comments.

The leaflets addressed to general public on poplars will be finalised by **30 October 2006** .the draft text (500 words) on *Ulmus* spp will be developed by E. Collin, for *Prunus avium* by B. De Cuyper, and for *Malus-Pyrus* by D. Pandeva and L. Nagy. The drafts will be sent to Secretariat by **30 March 2007**; the draft leaflets will be circulated to all Network Members for comments and finalised by **30 July 2007**.

Under Objective 3 (information dissemination), it was agreed to publish short news on relevant national efforts in the EUFORGEN Website. These will be 1-2 pages of text with a photograph. All Network members can send the material to the Secretariat in any moment.

Public Awareness in connection to conservation units was recognised as unimportant issue and will have an item on the agenda of the next meeting

Any other business

J. Koskela clarified the role of the EUFORGEN Information Working Group following questions by two meeting participants. This Working Group is not a permanent Network but a platform for the Networks to collaborate with each other in the area of information management and documentation. The Working Group will start its first activities once the EUFGIS project is launched and each Network will be asked to nominate a few representatives to provide inputs to the EUFGIS project. Additional cross-Network working groups or task forces can be established on other relevant topics, as needed.

R. Longauer proposed making photographs of wood of broadleaved tree species available through the EUFORGEN Web site. He agreed to scan specimen of timber of about 20 scattered broadleaved tree species at the Department of Wood Science of the Technical University (Faculty of Wood Technology) in Zvolen (Slovakia) and send the photographs to the Secretariat to be made available under the Network pages.

Date and place of next meeting

The Scattered Broadleaves Network can organize one more meeting during Phase III after the present meeting. The timing of this meeting was discussed and the participants agreed to organize it in May 2008.

Norway and Greece offered to host the next meeting of the Network. B. De Cuyper thanked T. Myking and F. Aravanopoulos for their offers on behalf of the Network. It was agreed that Norway is the first option for the next meeting. The theme of the meeting will focus on gene conservation at the distribution margins. The Secretariat will announce the dates of the meeting later after discussing with T. Myking.

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