

**Establishment of a European Information System on Forest Genetic Resources
(EUFGIS) (009 AGRI GEN RES 870/2004)**

Second meeting of the EUFGIS Expert Group

INRA (Institut National de la Recherche Agronomique National Institute for Agricultural
Research), Avignon, France, 8-9 April 2008

Summary of the meeting

Present:

Expert Group Members:

Paraskevi Alizoti (EUFORGEN Conifer Network)
Sándor Bordács (EUFORGEN Stand-forming Broadleaves Network)
Thröstur Eysteinnsson (EUFORGEN Forest Management Network)
Tor Myking (EUFORGEN Stand-forming Broadleaves Network)
Oudara Souvannavong (FAO)
Lorenzo Vietto (EUFORGEN Scattered Broadleaves Network)
Leena Yrjänä (EUFORGEN Conifer Network)

Expert Group Members Unable to attend:

Peter Rotach (EUFORGEN Scattered Broadleaves Network)

Observers:

Eric Collin (CEMAGREF, U.R. Ecosystèmes Forestiers, France)
Vincent Seigner (CEMAGREF, U.R. Ecosystèmes Forestiers, France)

Project Partners

Jason Hubert (Forest Research, United Kingdom)
Hojka Kraigher (Slovenian Forestry Institute, Slovenia)
François Lefevre (National Institute for Agricultural Research, France)
Roman Longauer (Forest Research Institute, Slovakia)
Ditte Christina Olrik (Danish Forest and Nature Agency, Denmark)
Silvio Schueler (Federal Research and Training Centre for Forests, Natural Hazards and
Landscape, Austria)
Jarkko Koskela (Bioversity International)
Michele Bozzano (Bioversity International)

Opening of the meeting

J. Koskela, the project coordinator, welcomed the participants to Avignon on behalf of Bioversity International. F. Lefevre, the hosting partner, did the same and presented an overview of INRA's activities in the campus and its work on genetic resources.

O. Souvannavong updated the meeting participants on the preparation of the State of the World's Forest Genetic Resources (SoW-FGR) report. He gave an overview of the preparatory process and underlined the relevance of the EUFGIS project in gathering relevant information from European countries.

All participants then introduced themselves. J. Koskela introduced the agenda of the meeting, which was adopted without changes.

Update on the EUFGIS project

J. Koskela presented an update on the EUFGIS project, which is one of the actions supported by the European Commission under the Council Regulation (No 870/2004) on genetic resources in agriculture. It is coordinated by Bioversity International and has six other project partners (Federal Research and Training Centre for Forests, Natural Hazards and Landscape (BFW), Austria; State Forest Tree Improvement Station (SNS), Denmark; National Institute for Agricultural Research (INRA), France; National Forest Centre (NLC), Slovakia; Slovenian Forestry Institute (SFI), Slovenia; Forest Research, United Kingdom). The project started on 1 April 2007 and it will run until 30 September 2010.

A workshop on documentation of *in situ* gene conservation of forest trees in Europe was organised in Denmark in October 2007. During the workshop, National Focal Points of EUFGIS and representatives of the EUFORGEN Networks analysed the current state of FGR documentation in Europe and made recommendations for the development of the EUFGIS information system.

Immediately after the workshop, the Expert Group had its first meeting and it revisited the workshop recommendations and started to discuss harmonization of minimum requirements and data standards for gene conservation units of forest trees in Europe. After the meeting, the review of all relevant, existing data standards continued and the first drafts of the EUFGIS data standards and the pan-European minimum requirements were developed.

Discussion on the outputs of the EUFGIS workshop and the 1st meeting of the Expert Group held in Denmark in October 2007

J. Koskela briefly presented the 12 workshop recommendations and their implication for the development of the EUFGIS information system.

M. Bozzano then presented the results of the survey on documentation of *in situ* gene conservation of forest trees in Europe. The survey was conducted for the October workshop. The purpose of the survey was to obtain information on *in situ* gene conservation efforts, how countries have organized the 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.

J. Koskela presented the first draft of the pan-European minimum requirements to the meeting participants for further discussion. Several suggestions were made to improve the documents (see below for specific comments).

Target tree species and populations

It was agreed that each gene conservation unit should have one or more tree species which are recognized as 'target tree species'. This means that management efforts for gene conservation are being carried out to favour these species.

It was also agreed that the gene conservation units should be predominantly located in autochthonous tree populations. However, additional *ex situ* units can be included if they represent well-adapted forests. Units of introduced tree species can also be entered into the information system if they are established to conserve well identified and differentiated characteristics compared to their original source populations (i.e. landraces).

It was concluded that a gene conservation unit can consist of pure and/or mixed species stands. No unknown or non-adapted genetic material should be present within a unit, but natural interspecific hybrids are allowed.

Management of the gene conservation units

During the meeting, it was underlined the importance of appropriate management plans to ensure long term gene conservation of forest trees and to allow evolution of tree populations.

The participants discussed that silvicultural techniques should be applied in such a way that they support reproductive processes and result in adequate regeneration of the target tree species. Natural regeneration should be favoured as a regeneration method, but stands within a unit can also be regenerated by planting or seeding. It was further agreed that the EUFGIS information system will only include gene conservation units which have a designated status as gene conservation areas or stands, recognized by the appropriate authorities or agencies in a country.

Minimum size of a gene conservation unit

It was agreed that each gene conservation unit should have a sufficient number of effectively mating and reproducing trees to prevent reduction of genetic diversity through demographic bottlenecks and consanguineous mating, and to maintain genetic diversity. The participants then discussed intensively what should be the minimum number of reproducing trees within a gene conservation unit. It was agreed to maintain the principle that the minimum population size can be different for different groups of tree species. It was also pointed out that the minimum population size should reflect the reason why a given unit was established. Regarding rare and endangered tree species, several participants suggested that the minimum population size should be lower than 50 trees. For these tree species, it was recommended that 15 unrelated trees could be the minimum population size, based on theoretical considerations and recent molecular data.

It was concluded that, to be included into the EUFGIS information system, a gene conservation unit must meet one of the following minimum requirements in terms of population size:

Case 1: Widely occurring and stand-forming conifers or broadleaf species: the unit must consist of 500 or more reproducing trees.

Case 2: Marginal or scattered tree populations: the unit must harbour a minimum of 50 reproducing trees or, in the case of dioecious tree species with sexual dimorphism, 50 seed bearing trees.

Case 3: Rare or endangered tree species: the unit must harbour a minimum of 15 unrelated reproducing trees.

Several participants stressed that Case 3 should be applied strictly to rare and endangered tree species only.

Buffer zone and surrounding areas

The importance of having a buffer zone around a gene conservation unit was recognised to be important by the meeting participants. However, it was considered difficult to define requirements for the size of a buffer zone as they vary depending on tree species and their

management. Furthermore, information on the buffer zone may be very difficult to obtain or extrapolate from the existing data. Subsequently, it was decided not to include the buffer zone as a specific requirement. Instead, the minimum requirements state that no trees or stands established with unknown or non-adapted genetic material of the target tree species should exist in the vicinity of a gene conservation unit. If they are present, trees of such origin need to be removed from the surrounding area.

Monitoring of the gene conservation units

The meeting participants highlighted that monitoring of the gene conservation units is highly recommendable in order to evaluate the regeneration success and to ensure the maintenance of reproductive capacity of trees over time. It was also discussed that field inventories should be carried out frequently, e.g. every 5 or 10 years, or as indicated by the management plan.

Discussion on the draft data standards for the gene conservation units

M. Bozzano presented the draft data standards after which the participants reviewed them one by one. All participants agreed that it is important to minimise the amount of data that needs to be collected and focus on those ones which are considered necessary for the information system.

Regarding the structure of the data standards, it was agreed to keep only two hierarchical levels, i.e. unit and species, and not to ask compartment level data. The unit level standards will focus on location data as well as administrative and management aspects. It was decided not to collect any soil data but information on specific soil characteristics can be added as remarks. Climatic variables for all units will be obtained from the same source (i.e. the WorldClim database www.worldclim.org). At the unit level, non-target tree species growing within the unit can be recorded but the species level standards will only focus on target species.

The meeting participants then made several suggestions to the unit and species level standards. It was agreed that Bioversity (J. Koskela and M. Bozzano) will compile the second draft of the data standards based on the comments received.

Wrap-up of the meeting and next steps

J. Koskela informed the participants that the third meeting of the Expert Group is scheduled to be held in Slovenia in late September or early October 2008 to finalize the pan-European minimum requirements and the data standards. Before that, the Expert Group should discuss the second draft of the documents by email. The draft documents will also be discussed at EUFORGEN Network meetings. He also reminded the participants on the expected outcomes of the Expert Group work and highlighted next steps in the project activities.

With no other matters, J. Koskela thanked the participants for their inputs and closed the meeting.

Agenda of the 2nd meeting of the EUFGIS Expert Group (8-9 April 2008):

Mon 7 April afternoon/evening: arrival to Hotel Medieval (Avignon)

Tue 8 April

08:00 pick-up from the hotel and transport to INRA-Avignon

08:30-12:30 morning session: update on the EUFGIS project; discussion on the outputs of the EUFGIS workshop and the 1st meeting of the Expert Group held in Denmark in October 2007; discussion on draft pan-European minimum requirements for gene conservation units of forest trees

12:30-14:00 lunch at INRA-Avignon (coffee breaks at 10:15 and 15:15)

14:00-18:00 afternoon session: discussion on the draft data standards for the gene conservation units

18:15 pick-up from INRA-Avignon and transport back to the hotel

20:00 dinner in the centre of Avignon

Wed 9 April

08:00 pick-up from the hotel and transport to INRA-Avignon

08:30-12:30 morning session: discussion on the minimum requirements and data standards continued

12:30-14:00 lunch at INRA-Avignon

14:00-18:00 afternoon session: presentation on the development of the ISS information system of EVOLTREE; wrap-up of the meeting and next steps

18:15 pick-up from INRA-Avignon and transport back to the hotel (transport to Marseille Airport and the Avignon train station as needed)

20:00 dinner in the centre of Avignon

Thu 10 April

EUFGIS Partners meeting

08:00 pick-up from the hotel and transport to INRA-Avignon

08:30-12:30 morning session: discussion on the requirements for technical and financial reporting to the EC

12:30-14:00 lunch at INRA-Avignon

Transport to the hotel, train station and Marseille Airport as needed