



**COST ACTION E43**

**Harmonisation of National Inventories in Europe:  
Techniques for Common Reporting**

**Draft Minutes of the plenary sessions of  
the 3rd Joint Working Group Meeting**

**Accademia Italiana di Scienze Forestali, Florence, Italy**

**December 2-3, 2004**

**I. Plenary session Thursday, December 2, 2004, 14:00-16:00**

**1. Welcome and opening of the meeting**

The director of the Accademia Italiana di Scienze Forestali (AISF), Prof. Fiorenzo Mancini opened the meeting and welcomed the group. Prof. Mancini gave a short historical briefing of the AISF. He expressed the importance of the work of the COST Action to European and Italian forests. The NFI work in Italy is followed by people with little experience in silviculture. Prof. Mancini emphasised the importance of clear goals and clear definitions.

**2. Adoption of the agenda and chairman election**

The proposed agenda was adopted without any amendments.

The Action Chairman Prof. Erkki Tomppo opened the meeting and welcomed all participants.

**3. Plenary presentations**

The meeting started with 3 presentations. The first presentation was given by Dr. Vittorio Tosi (ISAF) on "NFI in Italy, a new approach". Dr. Tosi gave a brief overview of the national forest resources in Italy and comparison of methods and results of the former and a new revised NFI based on multi-ressource and multi-source inventories.

Peter Holmgren from the FAO presented on "National Forest Assessments, FAO-IUFRO Knowledge Reference ". After a historical briefing of the work of the FRA since 1947, Mr. Holmgren explained the need for global assessments and information on sustainable forest management. The FAO is supporting the National Forest Assessments using a rough model in areas with sparse data but with the same approach enabling comparisons of information. The FAO-IUFRO initiative NFA knowledge reference was also presented.

Anna Barbati (AISF) presented "A proposal for a European Forest Type system of nomenclature". The concept of 'forest type' as a means of facilitating 'National Forest Inventory' harmonisation efforts was described. She presented the range of forest types developed initially within the EU BEAR project and subsequently taken forward by the EEA. 12 main forest types, which are further sub-divided. Anna Barbati presented a stratification approach based on indicators measured in most NFIs.

#### **4. State-of-the art reports**

##### Working group 1.

The chair, Claude Vidal and the co-chair Adrian Lanz presented the development of the work within the WG1 since the Hoersholm meeting. A draft questionnaire was developed focussing on a few selected variables as forest area and volume of living and dead trees. A Task Force of 6 Working Group participants met in Gembloux Belgium on September 22-23, 2004 in order to draft a questionnaire. This draft was sent around with questions on how "forest" and "tree" are defined and measured in each participating country and is also including questions on methods and sampling schemes.

WG1 has expectations of an open discussion on the draft with the aim to simplify the questionnaire and structure the discussion. The revised questionnaire will then be sent around to all COST E43 participants by end of December, 2004. The group also intend to define a time-table for the next 6 months and until the next meeting in April 2005.

##### Working group 2.

The chair of the WG2, Göran Ståhl announced the upcoming publication of the EEA report on biodiversity assessments in Europe by 8 countries. The results will also be circulated to the participants of the COST E43 Action.

The current position of the WG2. The questionnaire covering the carbon issue was produced in Gembloux by the Task Force of the WG2 and sent around to the rest of the WG2 for comments and filling. Already 60% of the participating countries have contributed to the questionnaire. One of the main results of the questionnaire was the role of the NFIs in the reporting to the UNFCCC/KP. A more detailed summary of the Gembloux meeting will be given to the WG2 during the working group session.

Two experts have been invited Zoltan Somogyi and Peter Holmgren to give an in-depth review of the new UNFCCC/KP reporting requirements. The group will also follow-up on relevant results from the COST E21 and CarboInvent groups. The working group 2 also intend to discuss and decide on how to proceed in 2005.

Some preliminary results from the questionnaire were presented representing 11 countries. The questionnaire shows that the NFI plays a central role in the LULUCF sector in all countries even though the future role of the NFIs is not always clear. All countries have made progress in meeting the new requirements in the reporting on carbon issues. Still there are a lot of uncertainties so the reporting system will be tested by most countries in 2005-2006.

Most countries had the ambition to have the same definition on forest for the UNFCCC and KP reporting but there is a large variability regarding what definition to use. Some are using FAO but still a lot of differing forest definitions regarding % of cover. There were also large variations in the definition of managed forests and also in the definition of other land use although there are major similarities still differences. The countries differ also in their method to estimate area (incl. ARD) and land-use transfer. Many countries are using a sample-based approach using the NFI.

An outstanding issue was how to classify natural regrowth after the abandonment of managed non-forest land. It is still unclear whether forest management should be elected under KP 3.4 Another issue is the carbon pool definitions. Many countries assess the aboveground biomass by tree biomass, some countries also evaluate non-tree biomass; belowground biomass is assessed as below stump biomass in some countries in other below ground mostly living roots

Deadwood and SOM also show major differences in assessments

**Conclusions:** the questionnaire is giving us important information for further discussion and for the choice of how to proceed from here.

### Working group 3

The chair, Annemarie Bastrup-Birk presented the work achieved by the WG3 since the Hoersholm meeting. Most of the WG3 met at the Gembloux meeting for further work with the table questionnaire.

Three subgroups were established to work with 1) forest type classification, 2) statistical issues and design and 3) the elaboration of a table questionnaire.

The forest biodiversity table developed during the Hoersholm meeting was discussing and further revised during the Gembloux meeting. A subgroup consisting of representatives from Norway, Denmark, Sweden, Italy, France, Austria and Switzerland agreed to further refine the table in order to present it at the Florence meeting for adoption.

The idea of reference presented at the Gembloux plenary meeting will be included in the working plan of the WG3.

The group expects to adopt the table questionnaire during the Florence meeting and to start the work with the forest type classification as suggested by Anna Barbati.

### The Action

The ENFIN –COST Action E43 was presented by the Chair of the Cost E43 Action, Erkki Tomppo. 23 countries have signed the Memorandum of Understanding by September 2004.

An overview of the work plans for the Working Groups of the COST Action was given. The following plans are common for all working group:

1. Design standardised result tables and other outputs for each WG. These tables serve as harmonised European level forest inventory, forest carbon pool and forest biodiversity statistics
2. Select the most essential tables and other outputs (core tables) for FRA, Carbon pools, BD

3. Analyse existing standards (TBFRA2000, FRA2005, MCPFE, IPCC GPG, CBD...) and the results of the questionnaires
4. Identify the key variables and parameters for which we define 'references' and
5. Define 'references'

Some examples of such tables were presented like Areas of land use classes (FRA, MCPFE, IPCC), volume of growing stock by species (species groups), means ( $m^3/ha$ ), totals ( $m^3$ ), increments by species (species groups), means ( $m^3/ha$ ), totals ( $m^3$ ), carbon pools in IPCC LU classes (5 pools, 3 tiers, 3 approaches), areas of stand age classes (by species), volume of dead wood by species and by stage of decay, key habitats, occurrence and abundance of species (tree, understorey vegetation).

All working groups were asked to collect information of the core tables and to identify differences between countries results and references, Bridges are then to be built in order to achieve standardised results.

A very important part of the work is to evaluate errors and reliability and to develop methods for eliminating biases and uncertainties. Countries may be asked which practices/definitions they could change.

The chair emphasised the 'Idea of Reference', and that not only reports but examples about harmonised forest resource, forest carbon pools, and forest biodiversity estimates should be provided.

### **Plenary session Friday December 3, 2004, 14:00-16:00**

1. Working group presentations
2. Training course announcement
3. Publication strategy

#### **1. Working Group Presentations**

##### WG1

The WG1 focussed on the definition of forest in the different NFIs. Each countries was discussed and approved during the working group sessions of WG1. A short discussion was taken together

with the WG3 on the use of forest type classification. The WG1 working plan was also discussed as well as the planning of the activities in the following years.

## WG2

The results of the first draft WG2 questionnaire (state of art in C reporting for the UNFCCC/Kyoto Protocol and use of NFI data) were presented to the new members of the WG2 and analysed thoroughly. Two invited experts participated to the WG2 sessions. Both contributed with several presentations. The invited expert, Dr. Zoltan Somogyi presented the policy background of the C reporting (Rio, MA, UNFCCC and KP).

Key issues with the carbon item were discussed. Relevant points in the different chapters of the new IPCC Good Practice Guidance LULUCF were presented for a better interpretation.

Zoltan Somogyi also contributed to a basic introduction on forest carbon cycling and to explain the new reporting (CRF) tables.

The second invited expert Dr. Wojtek Galinsky gave a presentation on the current reporting practices in the so-called Annex 1 countries.

The recent achievements of the COST E21 Action were presented. Dr. Wojtek Galinsky also presented the results of the CARBOINVENT EU-project with special emphasis on biomass functions and expansion factors complemented by the presentation of other WG2 relevant projects at the Joint Research Centre (Ispra).

## WG3

The list of forest biodiversity variables was structured in five items: species, landcover\_landuse, damages, soils, and deadwood. The table was discussed and adopted by the WG3. The subgroup 3 will insert the discussed changes and clarifications of the table.

The AISF proposed to build a database and at the same time a questionnaire to be placed on the web-page of the COST Action for interactive filling up of the table questionnaire. The draft questionnaire will be placed on the private Web-page for presentation to the rest of the WG3 and to the rest of the COST E43 Action as well. This is expected to happen early in 2005.

Jan-Erik Nielsen and Anna-Lena Axelsson gave a short presentation of the BioNord project. He presented the principles behind '*Forest Biodiversity Indicators in the Nordic Countries*'; that is, the choice of 24 biodiversity indicators and how harmonisation was achieved for certain variables. The list of 24 indicators can be found in the report. These are divided into 7 categories:

1) Forest area and land cover; 2) Resource management, 3) Forest methods and Landuse,

4) Forest dynamics, 5) Forest state, 6) Species diversity and 7) Threatened species

Several examples were given of the harmonisation of biodiversity indicators across Nordic country monitoring schemes. These included harmonisation efforts for deadwood decay classes (Finland having 5 decay classes while Sweden and Norway have 4 decay classes) which involved simplifying decay classes to 4. Forest age was given as another example of where harmonisation efforts were required. Forest age is a relative term and depends on the tree species and the production capacity of the site. Report should be consulted for full details of the presentation given by J-E. Nielsen (see reference above).

Anna Barbati (Italy) gave a more detailed presentation on the outcome of the EU BEAR 1+2 projects formulation of categories of 'Forest Types' which has subsequently been refined under the auspices of the EEA. The concept of 'forest type' as a means of facilitating 'National Forest Inventory' harmonisation efforts was described. She presented the range of forest types developed initially within the EU BEAR project and subsequently taken forward by the EEA. 12 main forest types, which are further sub-divided. Recognised that changing forest species assemblages linked to different biogeographical regions, or ecological site conditions. Possible for a single forest type to be in 2 (or more) different eco-regions. This highlights how only general information can be gleaned from eco-region maps.

Plantations (inc. short-time rotation) are recognised as distinct from semi-natural forest types and are split into 2 categories: Plantations (native) and plantations (exotic). Native or exotic can be determined using natural distribution of species according to site-native maps. Further subdivisions of each of the 12 main forest types into sub-categories are based on biodiversity determinants. Sub-categories are determined according to the coverage of the dominant species (>50%). Forest type categories are very broad and lack sufficient detail. Sub-categories are vital to understanding relationships with shifts in biodiversity and are considered to be a sufficiently good indicator of forest type (covers range) – further detail comes via the description of the site (e.g. coppiced, grazers present etc.). Possible to use forest types as presented to easily cross-reference to forest types categories in EUNIS and BEAR.

A. Barbati agreed to circulate the list of forest types and sub-categories as well as the description of these. Anna-Lena Axelsson, Iciar Alberdi-Asensio and Anna Barbati agreed to submit list of forest types and maps of eco-regions to WG2.

It was agreed that until the next meeting some testing of potential difficulties that may arise during harmonisation would be wise. A number of WG members were assigned the task of trying to find out what all countries have in the way of specific variables and highlight potential harmonisation problems to be discussed at the next meeting.

Age (Anna-Lena Axelsson – Sweden and Jean-Erik Nielsen - Norway)

Veteran trees and microsites (N. Barsoum - UK)

Deadwood (Anna-Lena Axelsson – Sweden)

Forest Types (A. Barbati - Italy + Iciar Alberdi-Asensio - Spain)

### **3. Short-term scientific mission (STSM)**

WG1 suggested a STSM for 2-3 young scientists familiar with the NFI system for a deeper treatment of the inventory system and an evaluation of the results of the questionnaire. Neither WG2 nor WG3 had yet discussed STSM at the Florence meeting. It was agreed to establish an email contact to circulate information on eventual STSM.

### **4. Training courses**

A training course is planned to be held in Prague, Czech Republic October 8-11, 2005 (updated information January 2005). The training course is entitled “Up-to-date technology for ground-based survey of national forest inventories”. The course is intended for people working in the field. The course has a limited budget allowing for a maximum of 12 participants, covering max one participant per country.

The representative of the COST Office, Mr. Günter Siegel, gave details on the procedures of the training courses which also can be read on the Web page of the COST Office.

Another training course was suggested by Prof. Marco Marchetti “Forest type reconnaissance in the Alps”.

### **5. Publication strategy**

The Management MC suggested to set-up a drafting Team to elaborate the Publication Plan including suggestions for authors. The following working plan was presented.

By end of 2005, a summary of country wise state-of-art reports including analyses and synthesis of the questionnaires. The first examples for harmonised results will be presented mid 2006 and will

used for evaluation of the Cost E43 Action. Field manuals are also expected to be available in English. By the end of 2007 it is expected that harmonisation of methods, results and sensitivity analysis have been reported and/or published in separate publications. An overview about the whole action including techniques for harmonisation and harmonised results for all WG will be published in 2008.

Training course materials are to be published after each training course. The organiser and the publication team are responsible for this task.

The MC recommends the publication of papers in scientific journals as well as presentations at scientific conferences. COST E43 and ENFIN should be mentioned and information on the publication should be given to the chair and the Publication team.

## **11. Closing of the meeting**

The chair closed the session and the Cost Meeting expressing his thankfulness to the organisers, to the WG leaders and their deputies to all other attendants and to Cost Secretary responsible for E43 Günter Siegel.

**12. Tuscany landscape and introduction to the excursion** by Prof. Mauro Agnoletti, University of Florence. Prof. Mauro Agnoletti closed the Florence meeting with an excellent historical briefing of the development of the Tuscany landscape.