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**Minutes of COST E43 WG 2 meeting in Thessaloniki,
November 16-17, 2006 (by NamPhuong Hoang and WG2 coordinators)**

- **with decisions made during the follow-up meeting in
Birmensdorf, Dec 14-15, as amendments**

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Introduction

The coordinators of WG 2, Göran Ståhl and Emil Cienciala, welcomed the participants to the meeting. NamPhuong Hoang volunteered to make notes for the minutes.

The following agenda was decided:

- 1) Country presentations in response to the report on reference definitions
- 2) Unresolved issues related to the references

Minutes WG2

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- 3) Discussions on building bridges
 - 4) Completion of the draft scientific article
 - 5) Planning of next steps

Below, each of these topics is treated under a separate heading.

1) Country presentations

Each country provided responses to the draft report on references prepared for the meeting. The guidelines were to identify unclear issues, assess the current situation in each country comparing actual and reference definitions, and provide some first thoughts on building bridges.

The minutes from the country presentations are given in the Appendix. Note that these minutes only cover selected issues and do not provide a complete coverage of each presentation.

Following the country presentations a joint subgroup session was arranged together with WG1 on biomass pool definitions. For WG2, this group was led by Gerald Kändler; the results served as additional input to the discussions and decisions about further actions.

2) Unresolved issues and decisions on further action

Summing up the country comments and the subgroup discussion, the following conclusions/decisions were made regarding the draft report on reference definitions:

- A general conclusion was that most parts of the proposed reference definitions were adequate and acceptable.
- A general decision was made that further work on the reference definitions could be made during a follow-up joint task force meeting in Birmensdorf in December (together with WG1 and WG3)
- Regarding the definition of forest, it was concluded that the definition to be elaborated by WG1 should also be used as our reference definition. An important issue in this regard concerns tree covered pastures: should they be included as forest or as grassland in the reporting? (*The conclusion from the meeting in Birmensdorf was that further work will be required by WG1 before a final forest definition can be presented.*)
- An agreement was reached that spontaneous growth of trees on former (abandoned) farmland should be considered afforestation, no matter how long time it takes for trees to start grow on these lands. The time point of afforestation in this case is when a “viable” regeneration is present (to be further elaborated together with WG1). (*In Birmensdorf it was decided that it must be left to each country to decide the thresholds for telling when the regeneration is “viable”. The Thessaloniki ideas of common thresholds, e.g. in terms of number of plants, were abandoned.*)

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- For aboveground biomass a discussion was held regarding whether the reference time point is winter or summer (i.e. with or without leaves). This question was forwarded to the Birmensdorf meeting. (*Decision in Birmensdorf: the reference time point should be winter, i.e. the leaves of deciduous trees should not be included as aboveground biomass.*)
 - The stump part of living trees should be included in aboveground biomass (not belowground biomass, as proposed by some countries)
 - Belowground biomass of non-tree vegetation may be included in countries where this pool is substantial. (However, in general it will not be included.)
 - Dead roots (and dead stumps) should be reported in the soil organic carbon pool. Living fine roots (< 2mm) also belong to the soil organic carbon pool.
 - Dead parts of living trees should be reported as aboveground biomass.
 - The definition of deadwood was forwarded to the Birmensdorf meeting. (*The decision in Birmensdorf was to include as dead wood only aboveground pieces - standing or lying – longer than 1.3 m and thicker than 10 cm (diameter). The details of this definition will be further elaborated by WG3.*)
 - Regarding the litter pool, a recommendation was to report this pool together with the soil organic carbon pool in order to avoid confusion emanating from what is considered litter and what is considered soil organic carbon.
 - For soil organic carbon, the mineral soil reference depth was changed from 50 cm to 40 cm (to correspond with definitions used within the BioSoil project).
 - Regarding the definition of forest management – an agreement was made that a broad definition encompassing all accessible forests should be used.
 - Some issues remained unresolved – e.g. the length of the transition period during land use changes, and specific issues related to burnt land.

3) Discussions on building bridges

Several ideas on building bridges were raised during the country presentations. It was decided to proceed with this work during a short term scientific mission (or a task force meeting) to be arranged – preliminarily – in April in Germany (Karsten Dunger). The idea was that a limited number of countries make sensitivity analyses based on the proposed references and also propose and apply first approaches to building bridges to meet the references.

4) Completion of draft scientific article

During subgroup discussions led by Emil Cienciala it was decided to slightly update the draft scientific article based on the questionnaires. Emil was appointed responsible for this work; the ambition to submit the article to *Silva Fennica* remained. (*Comment: The article was submitted to Silva Fennica in January*)

5) Planning of next steps

Until the next workgroup meeting (Helsinki, June 7-8), the following activities should be carried out:

- The draft scientific article should be completed and submitted. Responsible: Emil Cienciala. (*Completed in January*)
- The draft report on reference definitions should be completed. Deadline: End of February. Responsible: Göran Ståhl.
- A short term scientific mission (or a task force meeting) should be held – preliminarily – in Germany in April to perform case-based sensitivity analyses and build initial bridges as input to the meeting in Helsinki. Responsible: Karsten Dunger. (This work may be targeted also on producing a scientific article.) Likely, people from Germany, Finland, France, Italy and Sweden will participate.
- During March, country representatives should provide short country reports as input to the meeting/workshop in Germany regarding their judgments on whether or not reference definitions can be met and how bridges can be built. Responsible for submitting instructions: Göran Ståhl.

After the Helsinki meeting, the following indicative topics remain within our Action:

- Finalize work on bridges (autumn 2007)
- Initialize work on uncertainty analysis (autumn 2007)
- Prepare country reports (autumn 2007/spring 2008)
- Finalize work on uncertainty analysis (spring 2008)

Appendix – Country presentations

Finland (Hannu Ilvesniemi, Erkki Tomppo)

A presentation was given about the data and models currently used by Finland. It was argued that the results might be inaccurate when models had to be adjusted to meet revised definitions, such as the reference definitions we are working on. Furthermore, a discussion was held about the definition of soils. It was argued that, e.g., “litter” in Finland is not defined as in the IPCC Good Practice Guidance and there is a need to continue the discussions on how to define and report the different soil compartments.

Iceland (Arnor Snorrason)

The NFI in Iceland started last year. The number of measurements still is limited so there are and probably will be rather large uncertainties in the reported figures. The presentation also concerned definitions of land use classes and ARD in Iceland. It was emphasized that Grassland is the main class. Regarding the Carbon pools, Iceland excludes the stump part in their single tree biomass equations, but foliage is included for deciduous trees. Therefore, to meet the reference definitions the stump part must be included. Vegetation is sampled together with the litter and humus layer. Soil classification is another difficulty. In the belowground biomass Iceland uses the biomass factor 20% of total biomass to include stumps and roots, although the minimum root diameter is different from the proposed reference. For the belowground biomass of other vegetation than trees, Iceland would like to include coarse roots in the reference. The litter is sampled together with the ground vegetation and the humus layer. The inventory cycle is 5 years.

Norway (Gro Høyen)

The Norwegian definitions mainly are consistent with the IPCC/FAO definitions, however, for the mountain region no inventory is currently being carried out. Norway defines Grassland as areas utilized for grazing, regardless of tree cover, i.e. lands with tree cover are classified as Grassland if grazing is considered more important than forestry. It is difficult for Norway to distinguish between A (afforestation) and R (reforestation) so they will not make a difference between those two classes. Norway uses statistic from harvest data and a soil model (similar to Finland) but the accuracy of the results has not been assessed yet. No decision has yet been made about whether or not Forest Management will be elected under the Kyoto Protocol.

Estonia (Endla Asi)

In Estonia there are many difference data sources and the UNFCCC/KP reporting is being compiled on a contract basis. Thus it is somewhat difficult to oversee the full reporting system and to assess the reliability of the report. Issues of concern comprise how to assess the time point of land use changes, the definitions of land use categories, and how to obtain a stable environment for the reporting.

Italy (Vittorio Tosi)

Italy adopts the same definition of forest as FAO. An assessment had been made regarding the effects of using different definitions, but only minor differences were found. In the aboveground biomass, Italy does not consider the herbaceous vegetation or the understory below 50cm. Regarding dead wood, all pieces regardless of length are counted as belonging to this pool. Italy also has some uncertainties related to the definitions of the litter and soil organic carbon pools. For harvesting statistics Italy has introduced a protocol for stumps. So far, for estimating uncertainties, Italy has adopted the tier 1 approach (error propagation).

Switzerland (Edgar Kaufmann)

The presentation concerned the use of national official statistics and the reliability of the Swiss reporting. Issues of concern comprised the definitions of forest and forest management. In Switzerland the definition of forest is very advanced and adjustments will probably be needed to meet a common reference definition.

Slovakia (Tibor Priwitzer)

Slovakia has a different definition of land use categories compared to the proposed references. So far, no data are available from their sample based NFI and a major current problem is data completeness. Some problems are likely to be encountered regarding ARD estimation. Slovakia excludes the herbaceous part of vegetation from the aboveground biomass pool because it is very small. Further, a separation between humus or litter and organic soil horizons is preferred. The uncertainty of reported figures is likely to be very high. The Slovak reporting system is planned to be improved in the future.

Czech Republic (Emil Cienciala)

The current reporting is based on traditional stand inventory data since data from the recently developed sample based NFI are not yet available for the reporting. One problem is the forest definition, e.g. the issue of minimum patch size. Also, the Czech Republic uses different definitions of forest when reporting to different organizations, e.g. FAO and UNFCCC. The parameters of forest selected by the Czech Republic has the minimum tree crown cover 30% and the min area 0.05 ha (vs. 10% tree cover and 0.5 ha in the reference). Regarding changes in land use categories, the Czech Republic uses CORINE data in addition to cadastre data.

France (Antoine Colin)

The definition of forest management is important for France, since many forest areas are unmanaged. About 5% of the forests are inaccessible, primarily due to steepness. Regarding the biomass pools, the stump is currently excluded from the aboveground biomass pool.

Slovenia (Gal Kusar)

Slovenia raised some issues about the definitions of carbon pools, e.g. whether or not to include the biomass of herbs. Other issue of importance concerned the definition of forest management and

afforestation. Large areas in Slovenia are afforested due to spontaneous growth on abandoned farmlands.

Germany (Karsten Dunger and Gerald Kändler)

Different methods for assessing carbon pools were discussed. Also, a specific issue pertaining to Germany is that different data sources are available for the western vs the eastern part of the country. Thus, the reporting system must handle these differences and different harmonization approaches may be needed in different parts of the country. Further, the forest definition was discussed and critical aspects regard minimum area, canopy cover and minimum width. A challenge for Germany is to obtain consistency between different sources of information (see above), e.g. regarding the land use categories. Regarding forest management, all areas are considered managed. No measurements of herbs and understory are made and thus the aboveground biomass pool comprises only trees. Another important issue for Germany is how interpolations and extrapolations should be made.

Romania (Gheorghe Marin)

One issue brought up concerned the forest definition, e.g. the width of a piece of land to be counted and how to identify the forest border. Another issue concerned afforestation and deforestation, e.g. if spontaneous ongrowth on abandoned farmland should be treated as afforestation and how long the abandonment period may be while it is still considered as afforestation.

Lithuania (Gintaras Kulbukas)

The forest land definition and the Lithuanian forest resources inventory system were presented. Estimates and changes are obtained from remeasurements of permanent plots. Issues raised concerned the need for new biomass functions, e.g. the need for biomass functions for roots.

Greece (Thekla Tsitsoni)

The Greek definitions of land use categories were presented as well as the definitions of different carbon pool components. Some differences between the Greek definitions and the proposed references were identified; they related mainly to the definition of forest management, some biomass pools and land use categories.

Spain (Gerardo Sanchez)

The question about treating abandoned farmland as afforestation was again raised. Further, Spain so far has focused on aboveground biomass, but has introduced new methods for litter and soil organic carbon. The treatment of burned areas also was highlighted as an important area to consider. The inventory cycle in Spain is 10 years and the inventory is conducted region by region. This raises specific concerns regarding interpolation and extrapolation.