Minutes

of the

ForestBIOTA
Evaluation kick-off meeting

13 December 2005
Federal Research Centre for Forestry and Forest Products, Hamburg, Germany

1. The following participants attended the meeting:
Gherardo CHIRICI, Christiana COCCIUFA, Olivier DAILLANT, Marco FERRETTI, Richard FISCHER, Oliver GRANKE, Jacob HEILMANN-CLAUSEN, Martin LORENZ, Peter MEYER, Bruno PETRICCIONE, Walter SEIDLING, Silvia STOFER, Davide TRAVAGLINI,

2. M. Lorenz welcomed the participants at the Federal Research Centre for Forestry and Forest Products

3. The agenda was adopted (see Annex 1)

4. R. Fischer introduced into the general state of the project, mentioning that data collection in the field was now mostly finalized and data submission via internet to the BFH was almost complete. He thanked all participating institutes and experts for the good cooperation and for completing the data collection in time.

5. O. Granke presented the outline of the ForestBIOTA data base.
In case were only relative tree coordinates are included into the data base, BFH will get into contact with the countries and ask for coordinates of the origin of the relative system. In addition, the orientation of the plot will be asked for. With exeption to those countries that are presently finishing the data submission in close collaboration with BFH, the data base will now be closed for the beginning evaluations. Before closing the data base, BFH will again check the completeness of submitted data for each country.
The evaluating experts acknowledged the good qualityof the data base. Some additional quality checks will be performed by the data evaluaters in January 2006.

6. P. Meyer presented first evaluations based on the test data from 8 ForestBIOTA plots. Evaluations foreseen in the field of stand structure are specified in annex 3 to the minutes. The volume of the standing trees will be calculated only if volume equations can be made available by BFH and only for plots with tree height information.

7. D. Travaglini presented the first evaluations of the test data from 8 ForestBIOTA plots. Evaluations forsessen in the field of deadwood are specified in Annex 2.

8. S. Stofer presented recent results from lichen monitoring projects in Switzerland and from the BIOASSESS project and referred to planned lichen evaluations within ForestBIOTA (see Annex 2)

9. O. Granke informed about the planned evaluations in the field of groundvegetation (see Annex 2).

10. G. Chirici informed about the latest developments in setting up a revised forest type classification scheme under a contract of the Europen Environment Agency (EEA). The system forsees a classification into 14 categories with around 60 sub-types. Based on the EUNIS classification of the ForestBIOTA plots and the data base information a classification of the ForestBIOTA plots into the new system will be carried out as soon as the system is approved by the EEA.

11. W. Seidling presented latest results of an integrated evaluation of German Level II data and possible approaches of evaluating the plotwise condensed ForestBIOTA data that will be made availabe by the evaluating experts.

12. The biogeographical region should be added to the data base for each plot as an important predictor variable for several evaluations foreseen.

13. Data

Upon request, all countries may obtain "their" national data in structured data base format from BFH.
At the final meeting, BFH will ask the countries for permission to import the ForestBIOTA data into the Level II data base of ICP Forests.

14. Detailed time schedule

Dec 05	collection of timber volume equations (BFH, IAFS)
31 Dec	submission of final data from BFH to evaluating experts.
2-9 Jan	Consistency and data quality checks by the data evaluators, informatin to BFH
9 Jan	BFH will get into contact with countries in case that data quality questions need to be clarified.
9-16 Jan	Time for countries to react to data quality requests
9 Jan-28 Feb	data evaluation by IAFS, WSL, NFV, BFH
28 Feb	submission of condensed (mostly plotwise) data to BFH
Mar/Apr.	integrated evaluations by BFH
9-11 May	final meeting (date to be confirmed)

15. Final Meeting

A final meeting will take place in May 2006. The main results will be presented at this meeting. Invitations will be sent to a wider audience of institutions interested in forest biodiversity items (EC, JRC, EEA, MCPFE, EFI, ENFIN ...) BFH will suggest 9-11 May as possible date to the countries. A number of countries have already invited for such a meeting. The project coordinators will take contact with them.

16. Publications.

Work reports with the evaluation results will be made available by all evaluating experts before end of April 2005 (Exception for integrated evaluations). These reports will be sent to BFH and from there be distributed to all partners and participants of the final meeting in May. The reports are open for comments by the partners and will be revised accordingly after the final meeting.
Based on these reports, decisions will be taken at the final meeting as concerns scientific publications (who will publish what). Before May 2006, BFH will get into contact with publishers and check possibilities for a special volume that could include several ForestBIOTA articles.

17. Outlook:

It became clear at the meeting that the evaluations forseen until May 2006 will certainly not make the full possible benefit from the ForestBIOTA data base. Specifically in combination with the Level II data base and remote sensing data, there are a number of additional evaluations that can not be tackeled until May 2006. The final meeting will forsee a special session in order to discuss the further evaluations. A ForestBIOTA II project proposal has been submitted to the European Commission (ForestFocus 05/06) as an amendment to the German national programme.

Annex I

AGENDA

13 December 2005

8.30 – 9.00	welcome, introduction, general state of the project	R. Fischer
9.00 – 9.30	data received, data base structure	O. Granke
9.30 – 10.15	Stand structural evaluations planned *	P. Meyer
10.15 – 10.30	*Coffee break*	
10.30 – 11.15	Deadwood evaluations planned *	G. Chirichi
11.15 – 12.00	Epiphytic lichen evaluations planned*	S. Stofer
12.00 – 12.15	*Integrated biodiversity evaluation in Italy*	Marco Ferretti
12.15 – 13.15	*Lunch*	
13.15 – 13.30	Ground vegetation evaluations planned*	O. Granke
13.30 – 14.00	Forest type classification and habitat classification*	G. Chirichi
14.00 – 14.30	*Coffee break*	
14.30 – 15.00	Integrated evaluations planned *	Walter Seidling
15.00 – 15.30	Further procedure, details of data transfer, schedule, planning of reporting, final meeting (spring 2006)	R. Fischer, O. Granke
15.30 end of meeting		

* half of the time should be reserved for discussions

Annex 2 to the minutes of the ForestBIOTA evaluation kick-off meeting, Hamburg 13 December 2005:

Outline of the planned evaluations within the ForestBIOTA project.

Standard evaluations and internal correlations (within one given ForestBIOTA data set) are foreseen to be carried out by the experts responsible for the respective field (IAFS, WSL, NFV, BFH). Responsibilities for the testing of the additional hypothesis are included in the text.

Standard evaluations	internal correlations	Hypotheses to be tested based on additional ForestBIOTA data
Deadwood (IAFS)		
* For each deadwood piece IAFS will calculate the volume. The volumes will then be included in the central database by BFH. * IAFS will produce one overview table that gives total deadwood volume per plot as well as differentiation into diameter classes and deadwood components (standing, snags, lying, stumps)	* coarse estimators as proxi for deadwood volume (e.g. number of deadwood pieces above certain dimensions, number of stumps …) * relations between total volume and qualitative features (e.g.: is higher deadwood volume linked to bigger deadwood dimensions…)	*There are hardly any species groups assessed within ForestBIOTA that are assumed to have direct links to the deadwood on the plots (like e.g. fungi and beetles…);* exception probably: * relation between deadwood and bryophytes in the ground vegetation. * The evaluations will thus focus on factors determining the occurrence of deadwood: In either bi-variate or multivariate evaluations, relations of deadwood occurrence to the following factors will be evaluated: stand structure, management, living tree volume, age, forest types (evaluations by IAFS)
Epiph. lichens (WSL)		
For each plot * Diversity indices * Species richness will be calculated by WSL; results will be included in the central data base by BFH. * Threatened species will be evaluated as far as possible	* Macro – Crustosae lichens * Trends and patterns of species richness of lichen functional groups	* Epiphytic lichen diversity / richness is related to stand structure (light condition), deposition, meteo, management. Meteo information is taken either from the Level II data base or is taken into account by including lat./longitude, altitude and exposition (analyses by BFH – consultation by WSL) * Certain lichen species are specifically related to historically old forests Approach 1: WSL classifies species as far as possible, BFH can try to evaluate/verify classification based on ForestBIOTA data Approach 2: statistical check by BFH without pre-classification * Groups of variables (including

		macrolichen occurence), alone and in combination can serve as indicators for crustose lichen species richness (Evaluations by WSL)
Stand structure (NFV)		
See extra document (Annex 2)		*Stand structure is mostly not target variable, but predictor.* * Site (incl. exposition.), forest types, management, disturbances are related to differing stand structure (Evaluations by BFH).
Vegetation (BFH)		
* Species richness * Diversity indices * species area curves as far as possible * protected species according to Annex of Habitat Directive.		* Stand structure, site, soil, deposition, meteo, management, history are related to GV div. / richness (analysis: BFH) * Ellenberg light indicator for ground vegetation is related to canopy closure (analysis: BFH) * Total ground vegetation cover is related to canopy closure (Evaluations by BFH)
Forest types (IAFS)		
	Differences of diversity within forest types are smaller as compared to differences of diversity between forest types	*Forest type is mostly not target variable, but predictor within many other evaluations*
Others (BFH)		
* Structured and mixed forest stands provide for higher soil biological activity (Target variable: humus type or other proxis for soil biological activity to be developed in cooperation with soil experts and based on existing soil data from Level II plots) * Structured and mixed forest stands provide for better soil biodiversity (see above) and thus have the better nutritional status (target variable: foliage chemistry. Predictors should include among others deposition) * There is not <u>the</u> biodiversity at a given plot (this is important to communicate to policy). Instead, there are several key factors, some are measured within ForestBIOTA. Key factors measured are not necessarily linked (e.g. deadwood, epiphytic lichens, ground vegetation)		

Annex 3 to the minutes of the ForestBIOTA evaluation kick-off meeting, Hamburg 13 December 2005:

ForestBiota: Work package 1.1

Stand structure

Data evaluation and analysis

P. Meyer
Forestry Research Station of Lower Saxony (NFV), Germany

Stand structure data are delivered by the PCC (BFH) to NFV as a relational MS Access database comprising following variables:

- Plot-/standwise information
  - country
  - plot number
  - plot size
  - longitude, latitude
  - forest type
  - habitat classification (?)
  - list of simple estimates (species composition, type of species mixture, number of tree layers, canopy closure, forest history, intensity, type and method of management)
  - plot orientation (exposition or deviation from magnetic north?)
- Treewise information (living trees only?)
  - tree number
  - tree species
  - dbh
  - height
  - x- and y-coodinates of tree position

Data evaluation is carried out in 3 steps under SAS™ 8.2 (most of the code is written, but needs some transformation):

1. Check of data quality concerning completeness and plausibilty (e. g. coordinates, dbh/height relation). Missing data shall be added, if possible. Otherwise the range of computable indices (s. 2.) has to be reduced accordingly. Values not plausible shall be corrected in accordance with the PCC/the country representative.
2. Computation of following indices derived from treewise data:
   - Clark Evans Index
   - Pilou Index for non-randomness
   - Contagion Index
   - Mingling Index
   - Diameter differentiation
   - Standard deviation of dbh
   - Shannon index of diversity
   - Simpson index of diversity
   - Species profile index (for plots with full survey of tree heights)

Presentation of results on two levels:

- Plotwise: tables, graphs and maps (of spatial tree distribution)
- For all plots: data sheet comprising all simple estimates and derived indices

3. Analysis of the correlation between simple estimates and computed indices. This step aims at developing a valid and reproducable but utmost simple methodology to quantify stand structure in Level II plots. Mann-Witney U or Kruskal-Wallis test statistics may be used to find significant differences of computed indices between classes of simple estimates. Furthermore principal component or factor analysis may be used to find relationships between variables.

   Even if simple estimates should be proofed to be valid and reliable, it still remains questionable wether theses nominal or rank scale variables are sufficient for intercorrelation studies between stand structure and other ecosystem compartments like ground vegetation, lichens or soil.