



COST ACTION E43
Harmonisation of National Inventories in Europe:
Techniques for Common Reporting

9th Joint Working Group and Management Committee Meeting

Minerva Hotel, Bucharest, Romania
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Minute of Working Group 1

Participants

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REFERENCE DEFINITIONS

Adrian Lanz chaired the session and explained the new reference definition document.

A discussion was held regarding the Reference Definitions paper. The discussions concentrated on the agreement of definitions with a 4-point scale:

- Long term agreed (square, green smiley face)



- May change, but used as mid-term reference (round, green smiley face)



- Discussed but not agreed (round, yellow face)







- Discussed and unlikely to agree (round, red face)



The discussion continued over the 2 days with a desire to agree on as many definitions as possible. Of the 33 Original Reference Definitions:

Table 1: Summary of progress before and after Bucharest meeting

Smiley face	Before Bucharest	After Bucharest
 face		
 1	20	29
2	1	0
 3	12	4
 4	0	0

Below are the detailed changes to the Reference Definitions.

Note in Section 2 of the Draft Reference Definitions document, which could either be added to one of the existing 1-8 points, or a new point 9;

Reference definitions are aimed at the 'normal' forest survey conditions and are not meant to cover the extreme and unique range of tree growth see Ref' definitions 3.3.

Table 2: Detailed changes to Reference Definitions

Reference Definition number	Change	Smiley-face	
		Before Bucharest	After Bucharest
3.1	None	1	1
3.2	None	1	1
3.3	<i>(Tree and Shrub Height). The height of a tree or a shrub is the vertical distance between the intersection point between the stem and the ground (or root collar, whichever is higher) on the one hand, and the highest point (usually the apex) of the tree or shrub on the</i>	1	1

	<i>other hand.</i>		
	NB: Picture of bent tree to be added.		
3.4	In the explanation the following change was made: <i>To include fine roots as part or organ of a tree is natural in the this general concept, and therefore included in the above reference. Note, however, that from the viewpoint of measurement practicability, fine roots may be considered to be part of soil organic matter and litter.</i>	1	1
3.5	None	1	1
3.6	None	1	1
3.7	None	3	1
3.8	In the explanation the following change was made: <i>Usually the tree height and the stem length of a tree are similar. For softwoods, where trees are In inclined leaning or bent bended trees, the difference between tree height and the stem length of a tree becomes more obvious.</i> Reference picture to be added.	1	1
3.9	None	1	1
3.10	None	3	1
3.11	None	1	1
3.12	(Standing stem). <i>A lying stem is in its majority lying on the ground is a main stem which is not self supporting and should the support be removed the majority of its length would lie on the ground. Otherwise it is a standing stem.</i> <i>A standing stem is a tree whose stem axis deviates from the vertical less than 45°. For curved stems, the angle is defined with the line connecting stem tip and the base point.</i>	3	1
3.13	None	1	1
3.14	(Foliage). <i>The foliage comprises all above-ground greenery temporary parts of a tree, such as leaves and needles, reproductive parts and buds. It is separated from the main stem(s) and lateral parts by the location where the foliage is attached to the main stem(s) or lateral parts.</i>	1	1
3.15	(Stump of a stem). <i>The stump is the above-ground base part of a stem which would remain (or remains) after the tree was (or is) cut under normal felling conditions processes.</i>	1	1
3.16	(Stump height). <i>The stump height (W) is the distance measured along the axis of the stem from the base point of the stem to the point where the tree would be cut (or was cut) under normal felling conditions processes..</i>	1	1
3.17	None	1	1
3.18	None	1	1
3.19	(Large and small branches). <i>Large branches are that part of an above-ground lateral part of a tree with a minimum diameter of</i>	1	1

	<p>Z cm. Small branches are part, or all, of an above-ground lateral part of a tree with a diameter of less than Z cm. Note that the above-ground lateral part of a tree can be divided into either the part of small branches only, or a combination of large and small branches.</p> <p>Move the highlighted sentence to the explanation part of the text.</p>		
3.20	None	1	1
4.1	<p>(Forest). Forest is land spanning more than 0.5 ha</p> <ul style="list-style-type: none"> • with trees higher than 5 m of a crown cover of more than 10 %, or • with trees able to reach these thresholds in situ. <p>Excludes: Areas fulfilling the thresholds specified above but with a maximum width of less than 20 m (linear formations), and land predominantly under agricultural or urban use. Includes: Temporarily unstocked forest land.</p>	1	1
4.2	None	1	1
4.3	<p>(Other land with tree cover). Other land with tree cover is non-forest (and not other wooded land) spanning more than 0.5 ha with trees higher than 5 m of a crown cover of more than 10 %, i.e. stockings of trees on land predominantly under agricultural or urban use.</p> <p>Excludes: Areas fulfilling the thresholds specified above but with a maximum width of less than 20 m (linear formations).</p>	1	1
4.4	See notes on Sub group below	3	3
4.5	See notes on Sub group below	3	3
4.6	None	2	1
4.7	See notes on Sub group below – see amendment to notes	3	3
5.1	<p>(Growing stock). Growing stock is the volume of living, standing stems of trees over a specified land area. Included are stem volumes from the stump height to and including the stem top and the bark. Branches are excluded.</p> <p>NB: add to the explanation section that trees <1.3m height are not included.</p>	3	1
5.2	<p>(Living, lying volume). The living lying volume is the volume of living, lying stems over a specified land area (stet ? to be consistent with 5.1 and 5.3 ?). Included are stem volumes from the stump height to and including the stem top and the bark. Branches are excluded.</p> <p>NB: trees <1.3m height are not included, but trees with a DBH >0cm are included.</p>	3	1
5.3	<p>(Standing dead wood). Standing dead wood is the volume of dead and standing stems with a DBH >10 cm over a specified land area. Included are stem volumes from the stump height to, and including, the stem top and the bark. Branches are excluded.</p>	3	3

	NB: put into the explanation: Working Group 3 define the minimum DBH of standing deadwood as 10cm.		
5.4	(Decay stages). <i>Decay classes a, b and c are included in standing dead wood volume.</i>	3	1
5.5	(Broken standing stems). <i>Broken, standing and dead stems are included in standing dead wood as long as they reach a minimum height of 1.3 m. Stems broken below this height belong to lying dead wood.</i>	3	1
6.1	(Living tree and shrub biomass). <i>The living tree and shrub biomass is the mass of living trees and shrubs of any size and shape, either standing or lying, including all components ranging from the leaves, and reproductive parts and buds to the fine roots.</i> This definition no longer includes <i>fine roots</i> which Working Group 2 have a definition for.	3	1

Figure 12: a clearer explanation of the 4 decay classes (including pictures) is required from Working Group 3.

It was decided that an extra definition was required for:

- DBH class

SUB-GROUP DISCUSSIONS

Working Group divided into 3 sub-groups to discuss different topics:

- 1) The land classification flowchart, Figure 11, page 35 of 22 October 2007 document

Discussion of the flowchart resulted in the removal of some of the boxes, e.g. 'open area boundary' and 'point within open area'.

The cycle aspects of the flow chart were discussed. The overall conclusion was that when a decision on land type could not be reached after 1 time through the flow chart then the area should be enlarged, to determine the land type, the use of the flow chart would be repeated with the larger area.

Adrian Lanz will revise the Flow Chart and circulate it to rest of WG1 for comment.

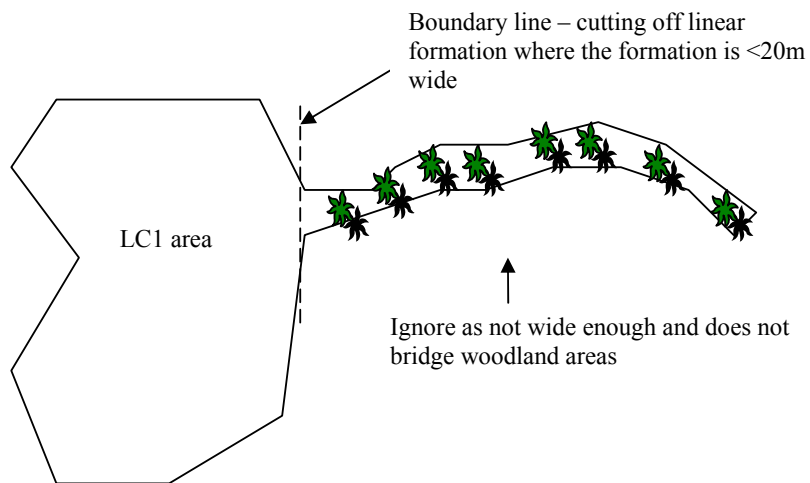
- 2) Linear features (Reference Definition 4.5)

Reference Definition (LC1: linear formations):

NOTE: The sub-group agreed that a 'linear feature' $\geq 20\text{m}$ wide and $\geq 0.5\text{ha}$ in area would be classified as a forest (assuming the minimum crown cover is also reached) and not a linear formation.

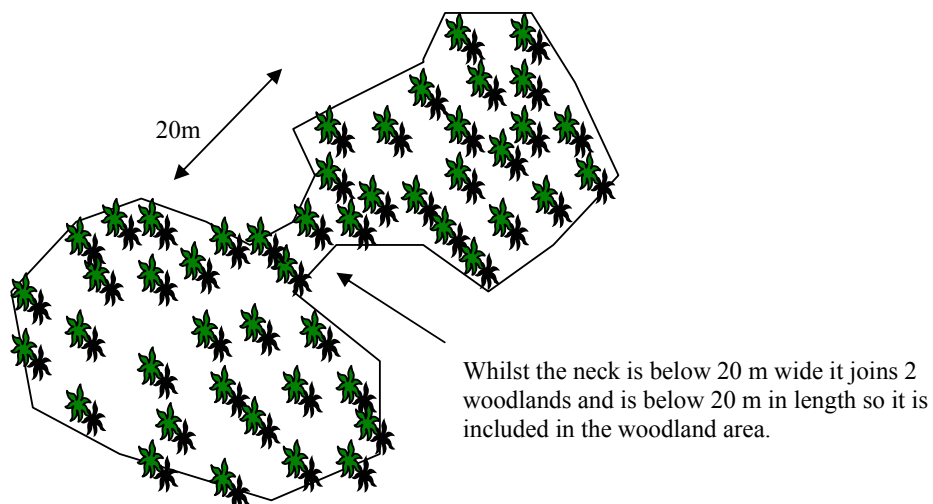
A linear formation (e.g. windbreaks, strips of trees):

- a) has to have a width $< 20\text{m}$
- b) where a linear formation (as defined in a) above) is joined to a larger LC1 area then the boundary line of the LC1 area should be created where the width of the linear formation $< 20\text{m}$.



- c) where a linear formation is connected to LC1 forest at both ends (resulting in an hourglass or dumbbell shape) the linear formation can be included within the LC1 forest area provided

- the length of the formation is $< 20\text{m}$
- the total area of the two LC1 areas and the linear formation $\geq 0.5\text{ha}$.



For example, if the lower LC1 area above was 0.4ha and the upper area was 0.3ha then they are too small to be classed as 'forest' on an individual basis. However, because they are connected by a linear formation <20m in length then the total area of the hourglass shape becomes >0.5ha and therefore can be classed as 'forest' (assuming it meets the other criteria for a forest area).

3)Reference Definition 4.4 (LC1 boundary line)

The boundary line of a forest area constructed from the ∞ -shape (where $\infty = -10m$) of standing trees, and follows the outside of the crown cover of these trees, except when other land uses are clearly defined. In these cases the boundary line will follow the clear delineation of other land features. For temporarily unstocked areas, the forest borderline will also follow the clear delineation of other land uses.*

**(NB: ∞ -shape definition needs further work)*

Reference Definition 4.7 (LC2 Boundary) will need to be re-written once the above definition has been discussed.

PRESENTATIONS:

Building bridges Case Studies

Case studies were presented for bridge building purposes by:

- Gheorghe Marin – Romanian Forest Inventory
- Stein Tomter – Comparison between two models for predicting the volume of small trees in Norway.
- Heino Polley – NFI volume functions for predicting small tree volume in Germany

Discussion were held to understand where bridges could be built based upon these presentations, and the presentations to be added to COST E43 WG1 www pages.

STSM presentation

Thomas Gschwantner and Nicolas Robert presented the results of the STSM on Bridge building for Area vs. Point Decision for deciding forest/non-forest..

FUTURE WORK

- Reference Definitions – comments to be sent to Adrian Lanz and final draft of all reference definitions to be completed by 1st Jan 2008
- STSM & TF: Norway, early 2008
 - Publications
 - Forest Reference Definitions
 - Compilation & value added work for WG1 questionnaire
- Bridge building/Harmonisation
- Country Reports – Erkki gave a brief update and ran through the requirements for these reports, now to be sent to Erkki Tomppo and Daisy Englert Duursma by 30 November 2007.
Erkki Tomppo reminded delegates that the majority of countries have already provided a brief NFI report in 2004, copies are on the E43 web site.