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Comments on C4 and C5

Criterion 4: Maintenance, Conservation and Appropriate Enhancement of Biological Diversity in Forest Ecosystems

General comment: The reporting period for all biodiversity indicators (excluding the indicator 4.8 threatened species, where the time span could be longer 10- 15 years) **could be five years**. We support the year **2010** as the recent one in the time series.

4.1 Tree species composition

Completeness: Forest data on tree species composition were reported for the year 2005 by twenty nine countries. The incomplete dataset for information on the number of species related to *forest type* did not allow analyses by European sub-regions.

RM 27: Tree species composition is not a frequently changing parameter, though two questions arise:

- What is expected frequency of reporting?
- Should countries report on all forests or on the youngest ones (e.g. 1-10 years old)?
- Or maybe these two aspects should be combined?

Comments: We suggest the frequency of reporting to be five years. The reporting should only be made on *all forests*.

So far the information on tree species composition in Europe does not include information on the tree species dominance (*tree species scientific and common name*). This information could be of relevance for policy and decision makers.

Suggestions: adding to Table 4.1 a row on predominance of tree species on forest land, or/and

Table 4.1 Tree species composition

Category	Year	Area with number of tree species occurring (1000 ha)				
		1	2-3	4-5	6-10	>10
Forest	Every five years					
	<i>tree species dominance</i>	<i>tree species scientific and common name</i>				

creating a new table on the area and/or growing stock per tree species (this information is also produced for FRA).

Category		Area (1000 ha) and/or growing stock (million m3)		
		1990	2000	2010
Forest	<i>main tree species 1 scientific and common name</i>			
	<i>main tree species 2 scientific and common name</i>			
	<i>etc.</i>			

Furthermore we suggest to exclude the attribute “> 10” and include instead “six or more” tree species. This is due that many countries had difficulties to produce data for the attribute “> 10”.

Category	Year	Area with number of tree species occurring (1000 ha)			
		1	2-3	4-5	6 or more
Forest	every five years				
	<i>tree species dominance</i>	<i>tree species scientific and common name</i>			

4.2 Regeneration

Completeness: Thirty European countries have reported the share of forest area expressed by regeneration types natural regeneration, *natural expansion*, *afforestation*, *planting*, *seeding* or *coppice*. Very few data provided by the counties distinguishes between regeneration methods of even-aged and uneven-aged forests. Therefore the results had to be presented combined for both these two forest structures. For some countries it was impossible to identify, whether the regeneration happened naturally or artificially (by planting or seeding). Natural expansion of forest was for some countries difficult to report and could only be estimated.

For other countries coppice stands of native species were considered as *other naturally regenerated forest*, while coppice stands of planted species were reported as coppice.

RM 28: FRA includes a new table on forest dynamics. Consider replacing the existing table by the global one, perhaps with some modification.

Comments: A more clear definition on the terms *natural regeneration*, *natural expansion*, *afforestation*, *planting*, *seeding* or *coppice* are needed. Discussion on the necessity of the terms *even-aged* and *uneven-aged stands* is needed.

Suggestion: the revision of the Table 4.2 Regeneration by splitting the Table in following columns:

Category	Year	Increase of forest area (1000 ha)			Regeneration of forest area (1000 ha)			
		Natural expansion	Afforestation		Natural regeneration	Planting	Seeding	Coppice
			Planting	seeding				
Forest	2010							
	2005							
	2000							
	1990							

Furthermore we suggest to only reporting on *forests* and not on *even-aged stands* and *uneven-aged stands*.

4.3 Naturalness

Completeness: Over thirty European countries reported on classes of naturalness. Many of the countries interpreted the definition of terms *undisturbed by man*, *semi-natural* and *plantations* in different ways. *Planting* and *seeding* is seen as a threshold between *semi-natural* and *plantations* in some counties. For some countries *semi-natural* accounts for forests that are not intensively managed (even when planted). The definition of *plantation* includes a reservation that the stands of native tree species that were established as plantations but that have been without intensive management for a significant period of time could be considered semi-natural forests. This might influence the interpretation, especially regarding the old plantations that have been partly shifted to semi-natural forests.

RM 32: Information requested by FRA, the table includes a proposal for harmonization of these two tables

Comment: a more clear definition of the terms of naturalness is needed.

Suggestions: to revise the definition of the term *semi-natural* by including the following sentence: *excludes stands which were established as plantations by exotic tree species*. Furthermore the definition of *plantations* needs more shaping: “*what is a significant period of time*”? In addition it should be clarified what is the difference between “*planted*” and “*plantation forests*”.

We agree with the suggested table 4.3 a. The term *primary forests* does not fit to European conditions, *undisturbed by man* is more relevant. We would need clarification in table 4.3.a on what ‘*Other*’ refers to in column ‘*Other naturally regenerated*’ and ‘*[part of Planted]*’ under *Plantation* column

4.4 Introduced tree species

Completeness: Over thirty European countries reported on introduced tree species. This indicator seems to be clear to the reporting countries.

Comments: Emphasis on the issue of invasive species as this is becoming more prominent in many countries. It could be done via more text based information from countries, links to national publications etc.

We agree with the suggested table 4.4a.

4.5 Deadwood

Completeness: Over twenty European countries provided information on the state of deadwood in 2010. Countries were asked for the first time to report deadwood data by the new scheme of 14 pan-European forest types, for the reference year 2005. The average number of countries reporting on forest types was around five per forest type, although for some forest types the average data depend on the reporting of only two to three countries.

Suggestions: it could be discussed to receive more information on the quality of deadwood, on the volume of the main tree species and on the main dimensions (diameter).

4.6 Genetic resources

Completeness: A total of thirty nine countries reported the 2010 data on this indicator (or part of it) to the EUFORGEN Secretariat at Biodiversity International. Of these countries, only twenty-five also provided the 1990 and 2000 data for the previous State of Europe's Forests report.

Comments: No further comments concerning this indicator.

4.7 Landscape patterns

The further development of this indicator has to be discussed among the group.

4.8 Threatened forest species

Completeness: In total, twenty seven European countries reported figures for threatened forest species in at least one of the organism groups for the 2010 assessment. More countries have provided information for 2010 as compared to previous assessments thus improving the reporting situation. The category of threatened forest tree species is best covered. It is noted that information is particularly lacking in countries of Central-East, South-East and South-West Europe, thus giving only a partial picture of threatened forest species in those regions.

Comments: It can be assumed that the data coverage provided by the countries will improve by the next reporting period.

4.9 Protected forest area

Completeness: Information was provided from over thirty European countries according to the Assessment Guidelines. In some cases, the countries could provide data only for forest but not for other wooded land, whereas in two countries information was available only on the forest and other wooded land combined. Additionally EU-27 countries were asked to fill out a separate form on Natura 2000 forest areas in order to have a look at protected forest areas overlapping between Natura 2000 network and areas fitting MCPFE classes.

RM 35: In addition FRA requests information about area of forest in protected areas.

Comments: The FRA expression *forest in protected areas* does not fit in the European classification. The MCPFE categories are created directly for protected forests.

Countries need more assistance in reporting data to the different FOREST EUROPE classes (e.g. class 1.3 and class 2). The response on forest areas within the Natura 2000 network was sparse because of insufficient data availability. Emphasis could be given in the next SoEF collection process whether and how to improve information PFAs and NATURA 2000 in order to have better information on PFAs in relation to NATURA 2000 (issue of overlapping/double counting etc.).

Criterion 5: Maintenance and Appropriate Enhancement of Protective Functions in Forest Management (notably soil and water)

5.1 Protective forests – soil, water and other ecosystem functions

Completeness: In 2010 thirty-seven countries have provided information on forest and other wooded land area addressing the prevention of soil erosion, preservation of water resources and ensuring other ecosystem services. In total about 120 million ha are reported in FOREST EUROPE region. This represents about 11% of the total area of forest and other wooded land area, or 19% when excluding the Russian Federation.

RM 37: FRA includes reporting on “protective functions and selected ecosystem services” that are relevant to the reporting on indicators 5.1, 5.2. Further analysis is needed to check if harmonization between these two systems is feasible. FRA reporting also cover year 2015

Comments: Statement made in the SoEF 2011: Explanatory information provided by countries show that the assessment guidelines may have not been interpreted consistently as concepts of protective forests can vary widely. While the guidelines require a legal basis or designated management plans ensuring long term commitment of protective functions, they are often exercised alongside others (e.g. production, recreation). The explanatory information from countries reveals that protective forests were identified either as having clearly distinguishable protective functions based on surveys (e.g. mapping of forest functions/services), given physical characteristics (e.g. slope; above a certain elevation) or designations of some sort. Designation is often not formal being for instance rooted in management plans. This may then put descriptive figures alongside such figures which base on legally designated protective forests.

Question/Action: How to ensure that we get more consistent information? Further it could be considered whether to show data separately for protection on legal basis (or based on management plans) and other designations of protective forests (e.g. exposition of slopes).

Regarding Comment RM 37: Ecosystem services are dealt with in parts under other indicators however not necessarily in terms of area (See: 1.4, 6.10 and 6.11). Question to be investigated is if such hectare based information could be provided and what would be the actual status (legal, other). There are doubts by authors as information for 5.1 and 5.2 were rather inconsistent for SoEF 2011.

Indicator 5.2 Protective Forest – Infrastructure and managed natural resources

Completeness: Those countries (19) reporting protective forests for infrastructure have mechanisms in place to either identify or designate forests to these protective functions. In these countries 7% of the forest area are reported as protective forest for infrastructure and managed natural resources. Data provided for 5.2 are fragmentary.

Comments: Comments provided by countries emphasise the difficulty to separate reported protective forest areas between Indicators 5.1 and 5.2. It was also observed that reported data does in most cases not base on formal designations.

Action: In addition to statement under '**5.1 question/action**' it can be out to discussion on whether to combine both indicators in one table (5.2 Indicator Infrastructure as a sub-class).