

Pan-European indicators – Criterion 4 (Biodiversity)

Interlinks between SoEF and FRA reporting

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4.1 DIVERSITY OF TREE SPECIES

Table 4.1: Tree species composition

Category	Year	Area with number of tree species occurring (1000 ha)			
		1	2-3	4-5	6+
Forest / OWL					

- not reported to FRA 2020
- reference areas and approaches to differ between countries

Approach to report on tree species composition	
Minimum size of trees to be included:	
Reference area for the assessment (stand or sample plot):	e.g. monitoring plots vs. various "forest stands"

4.2 REGENERATION

Table 4.2a **Total** forest area by expansion and regeneration type (i.e. stand origin)

Category	Year	Total area of forest by expansion/regeneration type (1000 ha)		
		<u>Natural expansion and natural regeneration</u>	<u>Afforestation and regeneration by planting and/or seeding</u>	<u>Coppice</u>

- overcomplicated wording (while assessing stand origin, the difference between expansion and regeneration is unimportant and often unknown)

FRA categories (1000 ha)	Reporting		Pan-European categories
	FRA	Pan-European	
Naturally regenerating forest (a)	Yes (1b)	Yes (4.2a)	Natural exp. and reg. + Coppice
Planted forest (b)	calc.	Yes(4.2a)	Afforestation and regeneration by planting and/or seeding
(of which) plantation forest	Yes (1b)	Yes (4.3a)	Plantations
...of which introduced sp.	Yes (1b)	Yes (4.3b)	Plantations > Introduced species
Other planted forest	Yes (1b)	Yes (4.2a)	(implicitly)

4.2 REGENERATION

Table 4.2b **Annual** forest expansion and regeneration

Category	Year	Annual forest expansion and regeneration (1000 ha)				
		Expansion of forest area		Regeneration of forest area		
		Afforestation	Natural expansion	Natural regeneration	Planting and seeding	Coppice

FRA categories (1000 ha)	Reporting		Pan-European categories
	FRA 2020	Pan- European 2020	
Forest expansion	Yes (1c)	Yes (4.2b)	Natural expansion + Afforestation
...of which afforestation	Yes (1c)	Yes (4.2b)	Afforestation
...of which natural expansion	Yes (1c)	Yes (4.2b)	Natural expansion
Annual reforestation Excludes natural regeneration!	Yes (1d)	Yes (4.2b)	Planting and seeding + Coppice

4.2 REGENERATION

The most important part of country comments:

Natural expansion and regeneration	Characteristics used to determine the class	e.g. spacing (in inventories), management records, thresholds for the proportion, etc.
Afforestation and regeneration by planting and/or seeding	Characteristics used to determine the class	e.g. spacing (in inventories), management records, thresholds for the proportion, etc.
Coppice	Characteristics used to determine the class	e.g. shape of trees (in inventories), records,

4.3 NATURALNESS

Table 4.3a: Naturalness

Category	Year	Area (1000 ha)		
		<u>Undisturbed by man</u> ¹⁾	<u>Semi-natural</u>	<u>Plantations</u>

- Seminatural and plantations just summarize their subclasses on the next slide
- Undisturbed by man (Pan-European) = primary forest (FRA) – the same definition, **but explanatory notes were significantly changed**
- Primary forests are reported in a different part of the FRA questionnaire (1e) than other parts of “naturalness” (1b)

Table 4.3b: Naturalness by subclasses

Category	Year	Area (1000 ha)						
		<u>Semi-natural</u>					<u>Plantations</u>	
		Naturally established	Naturalised introduced species	Established by planting and/or seeding	Coppice	Unknown origin	Native species	Introduced species

- added to improve the compatibility with the actual FRA approach to naturalness
- regenerating tree species introduced earlier than 250 year before are reported “naturalised”

FRA categories (1000 ha)	Reporting		Pan-European categories
	FRA	Pan-European	
Naturally regenerating forest (a)	Yes (1b)	Yes (4.2a)	Naturally established + Naturalised introduced + Coppice + Unknown
Planted forest (b)	Yes (1b)	Yes(4.2)	Semi-natural established by planting /seeding + Plantations
(of which) plantation forest	Yes (1b)	Yes (4.3a)	Plantations
...of which introduced sp.	Yes (1b)	Yes (4.3b)	Plantations > Introduced species
Other planted forest	Yes (1b)	Yes (4.2a)	Semi-natural established by planting/seeding

4.3 NATURALNESS

Approach to delineate between categories:

Criteria or thresholds used to delimit
“undisturbed by man” from *“semi-natural”*

Criteria or thresholds used to delimit
“semi-natural” from *“plantations”*

PRIMARY FOREST

Naturally regenerated forest of native tree species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.

Explanatory notes:

- Includes both **pristine** and **[formerly] (?) managed** forests that meet the definition.
- Includes forest with **visible signs of abiotic damages** (such as storm, snow, drought, fire) and biotic damages (such as insects, pests and diseases).
- Excludes forests where hunting, poaching, trapping or gathering have caused significant native species loss or disturbance to **ecological processes**.
- Some key characteristics of primary forests are:
 - they show natural forest **dynamics**, such as natural tree species composition, occurrence of dead wood, **natural age structure** and natural regeneration processes;
 - the area is **large enough** to maintain its natural ecological processes;
 - there has been **no known significant human intervention** or the last significant human intervention was long enough ago to have allowed the natural species composition and processes to have become re-established.

4.4 INTRODUCED TREE SPECIES

Table 4.4a: Introduced tree species

Category	Year	Area of stands dominated by introduced tree species (1000 ha)	
		Total	...of which: invasive

- “dominated” means > 50 % of something (canopy, basal area, growing stock –not clearly defined)

FRA categories (1000 ha)	Reporting		Pan-European categories
	FRA	Pan-European	
	No	Yes (4.4a)	Area of stands dominated by introduced tree species
	No	Yes (4.4a)	... of which invasive
	No	Yes (4.3b)	Naturalised introduced species
(plantation forests) ...of which introduced tree species	Yes (1b)	Yes (4.3b)	Plantations > Introduced species

4.4 INTRODUCED TREE SPECIES

Table 4.4b. Introduced tree species

<u>Scientific name of introduced tree species</u>	Forest area occupied (1000 ha)		
	2005	2010	2015

- areas of these species are not reported to FRA 2020 ,
- “area occupied by tree species” ideally means the area covered by canopy of the given tree species,
- in practice, it can be calculated through tree species composition (in percent) and the forest area,
- percentage of tree species can be calculated from growing stock, basal area, through estimate, etc.
- growing stocks of introduced species are reported to FRA (it should loosely correspond with areas occupied by these species)

4.4 INTRODUCED TREE SPECIES

Table 4.4c. Invasive tree species

<u>Scientific name of invasive tree species</u>	Forest area affected (1000 ha)		
	2005	2010	2015

- not reported to FRA 2020
- instead of the term "occupied" the term "affected" is used – "affected area" has been not defined yet

4.5 DEADWOOD

Table 4.5: Deadwood

Category	Year	<u>Volume of deadwood (m³/ha)</u>		
		Total	Standing	Lying
Volume of deadwood in FOWL by species groups				
<u>Coniferous</u>				
<u>Broadleaved</u>				

- **not directly reported to FRA 2020** (just tonnes/ha within “biomass stock”, which is difficult to compare)
- **Definitions differ:**
 - Pan-European: deadwood **excludes** litter, stumps and dead roots
 - FRA 2020: deadwood **includes**, stumps and dead roots and dead wood buried in soil

4.5 DEADWOOD

Country comments:

Approach applied to reporting on deadwood		
Please indicate if reported values are according to the recommended minimum sizes:		
If not, please specify relevant thresholds:	Minimum height of standing deadwood reported (m):	
	Minimum diameter of standing deadwood reported (cm):	
	Is volume above ground (AG) or above stump (AS)?	
	Minimum length of lying deadwood reported (m):	
	Minimum diameter of lying deadwood reported (cm):	

SoEF: thresholds are mentioned in the definition but there is no recommendation in this respect

FRA: deadwood larger than or equal to 10 cm in diameter **or any other** diameter used by the country

4.6 GENETIC RESOURCES

International data provider (EUFORGEN)

Variable(s) and measurement units	Reference unit	Measurement units	Reference years
Area managed for in situ gene conservation	countries, species	ha	1990, 2000, 2010, 2015
Area managed for ex situ gene conservation	countries, species	ha	1990, 2000, 2010, 2015
Area managed for seed production	countries, species	ha	1990, 2000, 2010, 2015

- Not reported in FRA 2020

4.7 FOREST FRAGMENTATION (Pilot study survey)

Full text: Area of continuous forest and of patches of forest separated by non-forest lands

International data provider (DG JRC ISPRA)

- In development, countries not covered by European RS data will not be included in SoEF 2020
- Not reported in FRA 2020

4.8 THREATENED FOREST SPECIES

Based on the countries' Red Lists (IUCN categories of conservation status)

Table 4.8: Threatened forest species

Category	Year	Total of taxa	<u>Threatened forest species</u>			
			<u>Vulnerable</u>	<u>Endangered</u>	<u>Critically endangered</u>	<u>Extinct in the wild</u>
			Absolute number			
Trees						
Birds						
Mammals						
... etc						

- **Not reported in FRA 2020**
- The main problem: Red Lists' "taxonomic coverage" and accuracy are gradually improving – more endangered taxa does not necessarily mean a negative trend
- Therefore: countries' comments are very important

4.9 PROTECTED FORESTS

Table 4.9: Protected forests

Category	Year	MCPFE Class 1.1	MCPFE Class 1.2	MCPFE Class 1.3	MCPFE Class 2
		1000 ha			

- FRA definition of a “protected area” **excludes** IUCN Categories V a VI

FRA categories (1000 ha)	Reporting		
	FRA	Pan-European	
	No	Yes (4.9)	All MCPFE/IUCN classes + Protected Forests;
Forest area within protected areas	Yes (3b, 8a)	No	Can be roughly calculated from above SoEF sub-categories IUCN categories V & VI and protective forests are excluded.

4.9 PROTECTED FORESTS

MCPFE classes		EEA ¹	IUCN ²
1: Management Objective "Biodiversity Conservation"	1.1: No active intervention	A	I
	1.2: Minimum intervention	A	II
	1.3: Conservation through active management	A	IV
2. Management Objective "Protection of Landscapes and Specific Natural Elements"		B	III, V, VI
3. Management Objective "Protective Functions"		(B)	n.a.

- Problem: Natura 2000 – according to legislation, it should be classed in 1.3 (IUCN IV), however, this approach is not generally accepted – please report the approach in your country
- FRA: Protective functions are reported in 3a (Designated management objective)

4.10 COMMON FOREST BIRD SPECIES

(Pilot study survey)

Full text: Occurrence of common breeding bird species related to forest ecosystems

International Data Provider (Pan-European Common Bird Monitoring Scheme - PECBMS)

- **Not reported in FRA 2020**
- National feedback is expected under "Country comments" regarding the data available at PECBMS website, their methodology and trends