



Joint
FOREST EUROPE/UNECE/FAO
Questionnaire
on
Pan-European Indicators
for Sustainable Forest Management

Draft version, 23 September 2013

Quantitative indicators
collected through UNECE/FAO, Geneva

<COUNTRY NAME>

< Date of submission >

United Nations, Geneva
September 2013

National correspondent:

Name:	
Organisation:	
Address:	
Phone/Fax:	
E-mail:	

Other professionals involved in the reporting process:

Name:	
Organisation:	
E-mail:	
Reporting forms:	
Name:	
Organisation:	
E-mail:	
Reporting forms:	
Name:	
Organisation:	
E-mail:	
Reporting forms:	
Name:	
Organisation:	
E-mail:	
Reporting forms:	
Name:	
Organisation:	
E-mail:	
Reporting forms:	

Table of contents

Introduction.....	4
Summary Table for Improved Pan-European Indicators for SFM - quantitative indicators	7
Reporting Form 1.1: Forest area	9
Reporting Form 1.2: Growing stock	12
Reporting Form 1.3a: Age structure.....	15
Reporting Form 1.3b: Diameter distribution.....	18
Reporting Form 1.4: Carbon stock.....	20
Indicator 2.1: Deposition of air pollutants	22
Indicator 2.2: Soil condition.....	23
Indicator 2.3: Defoliation.....	25
Reporting Form 2.4: Forest damage.....	27
Reporting Form 3.1: Increment and fellings	29
Reporting Form 3.2: Roundwood	31
Reporting Form 3.3: Non-wood goods	33
Reporting Form 3.4: Services	35
Reporting Form 3.5: Forests under management plans.....	37
Reporting Form 4.1: Tree species composition.....	39
Reporting Form 4.2: Regeneration.....	40
Reporting Form 4.3: Naturalness	42
Reporting Form 4.4: Introduced tree species	44
Reporting Form 4.5: Deadwood.....	46
Indicator 4.6: Forest genetic diversity.....	48
Indicator 4.7: Landscape pattern	49
Reporting Form 4.8: Threatened forest species.....	51
Reporting Form 4.9: Protected forests	53
Reporting Form 5: Protective forests – soil, water and other ecosystem functions; – infrastructure and managed natural resources	55
Reporting Form 6.1: Forest holdings	57
Reporting Form 6.2: Contribution of forest sector to GDP.....	59
Reporting Form 6.3: Net revenue.....	61
Reporting Form 6.4: Expenditures for services.....	62
Reporting Form 6.5: Forest sector workforce	64
Reporting Form 6.6: Occupational safety and health.....	66
Indicator 6.7: Wood consumption.....	68
Indicator 6.8: Trade in wood.....	70
Reporting Form 6.9: Energy from wood.....	72
Reporting Form 6.10: Accessibility for recreation.....	74
Reporting Form 6.11: Cultural and spiritual values	76
Terms and definitions.....	78

Introduction

In the course of the regular work on reporting on the state of forests and forest management in the pan-European region, including the preparation of the Report on Sustainable Forest Management (SFM) in Europe “*State of Europe’s Forests*” – SoEF 2015, the UNECE/FAO Forestry and Timber Section together with FOREST EUROPE Liaison Unit Madrid engaged in an extensive process of source data collection. The process consists of collection of data and information from countries (National Correspondents), as well as from UNECE/FAO and FAO databases and from other International Data Providers (IDPs). The main instrument for data collection (quantitative indicators) for this round of reporting on the pan-European Criteria and Indicators (C&I) for SFM¹ will be the present Questionnaire, as well as information received from IDPs to be prepared according to the agreed Technical Specifications (available with the secretariat and corresponding IDPs).

The Questionnaire addresses all pan-European C&I, taking into account that data/information on Indicators 2.1, 2.2, 2.3, 4.6, 4.7, 6.7 and 6.8 will be provided by International Data Providers (*EC JRC, ICP Forests, Bioversity International, EUROSTAT, FAO, UNECE - JFSQ and JWEE*). The set of Terms and Definitions supporting the Questionnaire and its Reporting Forms are included.

The deadline for responses to be submitted by countries using the Reporting Forms is **31 March 2014**. The operative reporting form for this Questionnaire is prepared in Excel format. The work of National Correspondents will be supported by the UNECE/FAO Forestry and Timber Section and the group of experts/reviewers of the national questionnaires.

Explanatory Notes to the Questionnaire

The Questionnaire includes the Summary Table, which offers guidance on the sources of data/information. The Summary Table lists the Reporting Forms to be completed by countries - National Correspondents directly, including those which are pre-filled from available sources. The Summary Table indicates also the reference years of reporting on specific Indicators and the source of pre-filled data.

Each of the 30 Reporting Forms provides: (i) the exact title of the corresponding Indicator for SFM, to be reported by countries, (ii) the text of the related terms and definitions, (iii) the Table requesting information on “*Data sources*”, as well as (iv) the main Table asking for data. Explanatory information and “*Country comments*” can be provided in the dedicated space in all Reporting Forms. Reporting Notes are meant to support and guide the filling of the Reporting Forms.

For the first time the UNECE/FAO/FOREST EUROPE reporting 2015 is carried out in parallel with the global Forest Resources Assessment/Collaborative Forest Resources Reporting (FRA/CFRQ) 2015. As the data collection for the global reporting has not been completed at the time of issuing this Questionnaire, prefilling the pan-European Questionnaire with the global data was not feasible. However, to ease the work of National Correspondents, all corresponding categories were clearly marked in this Questionnaire and the information about the relevant FRA/CFRQ categories was provided. To help National Correspondents to ensure consistency between the values reported for the corresponding variables, it is envisaged that the same expert/reviewer will be assisting a country in completing both the global and the regional questionnaires.

Due to a decision of the FOREST EUROPE Expert Level Meeting (March 2013) the reporting according to the new European Forest Types (EFTs) classification has been discontinued. Information by “*Forest type*” according to the old classification (predominantly coniferous, predominantly broadleaved, mixed) is requested for several tables on indicators 1.1 (*Forest area*), 1.2 (*Growing stock*) and 1.3 (*Age structure*).

¹ „*Improved Pan-European Indicators For Sustainable Forest Management*”, as adopted by the MCPFE Expert Level Meeting, 7-8 October 2002, Vienna, Austria

When filling in a reporting table, no fields should be left blank. However, if an entire table is not reported upon, all fields can be left blank and the reason for not reporting should be noted under “*Country comments*”. When filling in a reporting table for a category where national data are missing or so weak that they cannot be used for generating some of the requested information, countries should put “n/a” (not available) in the corresponding fields of the reporting table. Knowing that no national data are available is in itself very important information and should be documented in the country report. Please do not leave a table or a field blank if the requested category is not applicable for your country. In such cases a “0” (zero) should be inserted.

The total forest area is to be reported in Table 1.1a. For a number of other tables the distribution of total forest area by various categories is requested (Tables 1.3a & 1.3b, 4.1a, 4.2, 4.3a, 6.1). According to the forest definition, the forest area also includes temporarily unstocked areas (e.g. clearcuts) and smaller, more or less permanently unstocked areas (e.g. forest roads, firebreaks). There may be sometimes a problem to assign these areas to the categories in the mentioned tables, since basic forest features are missing. **It is still recommended to include unstocked areas, to obtain the same total forest area for all of these tables.** In some cases it may be possible to estimate what forest type, species composition etc. that existed on the spot before the removal of the stand, in other cases information may be obtained about the surrounding area. If no other information is available, one solution may be to distribute the area of unstocked areas proportionally to the table categories, according to the current distribution of stocked forest area. The same problem may also apply to “*other wooded land*” for some of these tables. Please indicate under “*Country comments*” how these were carried out, if applicable.

Data/information received directly from International Data Providers, not covered by this Questionnaire, will be sent to National Correspondents for verification by the end of June 2014 (except the information on Indicators 2.2 and 4.7, which will not be reported on a country basis; they will be presented in the publication in the form of maps and/or other graphics).

Should you have any questions in the process of preparation of your country response to this Questionnaire, or specific question(s) on individual Reporting Forms, please do not hesitate to contact the UNECE/FAO secretariat (please see the contact address below).

Documentation of data sources

References to sources of information - references to all reporting categories must be documented in each reporting form.

Data Quality:

- High: Excellent data quality (e.g. empirically, robust data from systematic data collection with established routines)
- Medium: Good data quality (e.g. not systematic, periodic studies with widely recognized precision, high data quality with partial coverage or good expert estimate - based on more than one source)
- Low: Rough estimate (about right order of magnitude)

Year(s) – reference year(s) for the inventory or other data collection, not necessarily the year of publication.

Type of inventory – National correspondents are requested to provide information on the way in which the reported data was collected, by choosing one from the following categories: national forest inventory (NFI), stand inventory (SI), managerial records (MR), mixed (M), other (O) – please specify in comments.

National currency – Contrary to the previous reporting cycles, all monetary values should be reported in a national currency that was valid in a reporting year. Correspondents are kindly asked to provide information on the currencies used for reporting in individual years in Table A.

Table A. National currency in the reporting years

Year	National Currency						
1988		1995		2002		2009	
1989		1996		2003		2010	
1990		1997		2004		2011	
1991		1998		2005		2012	
1992		1999		2006			
1993		2000		2007			
1994		2001		2008			

Contact:

Mr. Roman Michalak
 Forestry Officer, Forestry and Timber Section
 UN Economic Commission for Europe/Food and Agriculture Organization

Mail Address
 UNECE Trade and Sustainable Land Management Division
 Palais des Nations, CH 1211 Geneva 10, Switzerland

E-mail: roman.michalak@unece.org
 Tel. + 41 22 917 2879
 Fax: + 41 22 917 0041
 Web: www.unece.org/forests

Summary Table for Improved Pan-European Indicators for SFM - quantitative indicators

No.	Indicator	1990	2000	2005	2010	2015	Data reference	Data provider
C 1: Forest Resources and Carbon								
1.1	Forest area	x	x	x	x	x	Data for a reporting year	
1.2	Growing stock	x	x	x	x	x	Data for a reporting year	
1.3	Age structure and/or diameter distribution	x	x	x	x		Data for a reporting year	
1.4	Carbon stock	x	x	x	x	x	Data for a reporting year	
C 2: Maintenance of Forest Ecosystem Health and Vitality								
2.1	Deposition of air pollutants	x	x	x	x			ICP/JRC – will be reported through IDP
2.2	Soil condition	x	x	x	x			ICP/JRC – will be reported through IDP
2.3	Defoliation	x	x	x	x			ICP/JRC – will be reported through IDP
2.4	Forest damage	x	x	x	x		Data for a reporting year	
C 3: Productive Functions of Forests (Wood and Non-Wood)								
3.1	Increment and fellings	x	x	x	x		Data for a 5-year period	
3.2	Roundwood	x	x	x	x	x	Annual data for the period 1988-2012	UNECE–JFSQ – partly pre-filled
3.3	Non-wood goods				x		Data for a reporting year	
3.4	Services				x		Data for a reporting year	
3.5	Forests under management plans	x	x	x	x		Data for a reporting year	
C 4: Biological Diversity in Forest Ecosystems								
4.1	Tree species composition	x	x	x	x		Data for a reporting year	
4.2	Regeneration	x	x	x	x		Data for a reporting year and for a 5-year period	
4.3	Naturalness	x	x	x	x	x	Data for a reporting year	
4.4	Introduced tree species	x	x	x	x	x	Data for a reporting year	
4.5	Deadwood	x	x	x	x		Data for a reporting year	
4.6	Genetic resources	x	x	x	x			Bioersivity International – will be reported through IDP
4.7	Landscape pattern	x	x	x				EU JRC – will be reported through IDP
4.8	Threatened forest species	x	x	x	x		Data for a reporting year	
4.9	Protected forests	x	x	x	x	x	Data for a reporting year	

No.	Indicator	1990	2000	2005	2010	2015	Data reference	Data provider
C 5: Protective Functions in Forest Management								
	Protective forests: – soil, water and other ecosystem functions (5.1) – infrastructure and managed natural resources (5.2)	x	x	x	x	x	Data for a reporting year	
C 6: Socio-economic functions and conditions								
6.1	Forest holdings	x	x	x	x		Data for a reporting year	
6.2	Contribution of forest sector to GDP	x	x	x	x		Data for a reporting year	EUROSTAT (EA/IEEAF) /FAO – partly pre-filled
6.3	Net revenue	x	x	x	x		Data for a reporting year	EUROSTAT (IEEAF) – partly pre-filled
6.4	Expenditures for services	x	x	x	x		Data for a reporting year	
6.5	Forest sector workforce	x	x	x	x		Data for a 3-year period	EUROSTAT – partly pre-filled
6.6	Occupational safety and health	x	x	x	x		Data for a 5-year period	
6.7	Wood consumption	x	x	x	x	x	Annual data for 1988-2013 period and data for 5-year periods	UNECE-JFSQ – will be reported through IDP
6.8	Trade in wood	x	x	x	x	x	Annual data 1988-2013 period and data for 5-year periods	UNECE-JFSQ – will be reported through IDP
6.9	Energy from wood resources			x	x	x	Data for 2007, 2009, 2011 (JWEE reporting years)	UNECE-JWEE – partly pre-filled
6.10	Accessibility for recreation	x	x	x	x		Data for a reporting year For intensity of use - latest available	
6.11	Cultural and spiritual values				x		Data for a latest available year	

Note: Years marked by „x“ are covered by 2015 reporting, the grey shade shows indicators covered by the national questionnaire.

Reporting Form 1.1: Forest area

Pan-European indicator 1.1: Area of forest and other wooded land, classified by forest type and by availability for wood supply, and share of forest and other wooded land in total land area.

Related SoEF definitions: Forest, Other wooded land, Forest available for wood supply, Other land, Forest type, Predominantly coniferous forest, Predominantly broadleaved forest, Mixed forest

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 1.1a: Forest area

Category	Year	Area (1000 ha)
Forest	2015	FRA T1a
	2010	
	2005	
	2000	
	1990	
... of which available for wood supply	2015	
	2010	
	2005	
	2000	
	1990	
Other wooded land	2015	FRA T1a
	2010	
	2005	
	2000	
	1990	
Total forest and other wooded land	2015	FRA T1a (as a total of Forest and OWL)
	2010	
	2005	
	2000	
	1990	
Other land	2015	FRA T1a
	2010	
	2005	
	2000	
	1990	
... of which with tree cover	2015	FRA T1a
	2010	
	2005	
	2000	
	1990	

Table 1.1b: Forest area by forest types

Category	Forest area (1000 ha)			
	1990	2000	2005	2010
Predominantly coniferous forest				
Predominantly broadleaved forest				
Mixed forest				

Country comments:

The year and data reported for 2015
How did you generate values for 2015: <ul style="list-style-type: none"> - the recent available year - extrapolation - assessment based on evidence (e.g. forecast, outlooks, national afforestation programmes, forest policy targets)

Approach to reporting on the categories of the Table 1.1a			
Category	Check if included	Area estimate (1000 ha)	Comments
Forest			
Christmas tree plantations on forest land	<input type="checkbox"/>		
Poplar plantations on forest land	<input type="checkbox"/>		
Short-rotation forestry	<input type="checkbox"/>		
Short-rotation coppices on forest land	<input type="checkbox"/>		
... of which not available for wood supply			
Protected forests	<input type="checkbox"/>		
Forests of very low productivity / economic revenue of harvesting	<input type="checkbox"/>		
Forests physically not accessible	<input type="checkbox"/>		
Protective forests	<input type="checkbox"/>		
Military forests	<input type="checkbox"/>		
Other forests excluded from harvesting legally or by the owner's decision	<input type="checkbox"/>		
Other, please specify	<input type="checkbox"/>		
Other wooded land			
Alpine shrubland (e.g. Pinus mugo)	<input type="checkbox"/>		
Other shrubland (e.g. maquis, garrigue, matorral)	<input type="checkbox"/>		
Other, please specify	<input type="checkbox"/>		
Other land with tree cover			
Agro-forestry (silvo-pastoral) areas (e.g. for rearing Iberian black pig)	<input type="checkbox"/>		
Plantations of nut-producing trees or shrubs (e.g. Sweet chestnuts, almonds, walnuts, hazelnuts)	<input type="checkbox"/>		
Olive groves and fruit tree orchards	<input type="checkbox"/>		
Poplar plantations on agricultural land	<input type="checkbox"/>		
Short-rotation coppices on agricultural land	<input type="checkbox"/>		
Christmas tree plantations on agricultural land	<input type="checkbox"/>		

Category	Comments related to data, definitions, etc.	Comments on trend(s)
Forest area		
... of which available for wood supply		
OWL area	Main national categories included in “ <i>Other wooded land</i> ”	
Forest types		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table T1a. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en/>
2. **Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the “*State of Europe’s Forest s 2011*” (www.unece.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations . If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “*Country comments*”.
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010, 2015) noted in the Table, or in a nearest year for which data is available.
5. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
6. The share of FOWL in total land (see indicator text) will be calculated by UNECE/FAO, using a figure for “*Total land*” as maintained by FAOSTAT. Please check the total land area (Forest, Other Wooded Land and Other Land) used for calculation of your area figures. If that is not in accordance with FAOSTAT, calibration of the results may be necessary.
7. The country approach to the calculation / specification of “*Forest available for wood supply*” (FAWS), as well as the list of national categories included into the FAWS calculation, should be noted in “*Country comments*”.

Reporting Form 1.2: Growing stock

Pan-European indicator 1.2: Growing stock on forest and other wooded land, classified by forest type and by availability for wood supply

Related SoEF definitions: Forest, Other wooded land, Forest available for wood supply, Growing stock, Broadleaved, Coniferous, Forest type, Predominantly coniferous forest, Predominantly broadleaved forest, Mixed forest

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 1.2a: Growing stock

Category	Year	Growing stock (million m ³ o.b.)		
		Total	... of which:	
			Coniferous	Broadleaved
Forest	2015	FRA T3a		
	2010			
	2005			
	2000			
	1990			
... of which available for wood supply	2015			
	2010			
	2005			
	2000			
	1990			
Other wooded land	2015	FRA T3a		
	2010			
	2005			
	2000			
	1990			
Total forest and other wooded land	2015	FRA T3a (total)		
	2010			
	2005			
	2000			
	1990			

Table 1.2b: Growing stock by forest type

Category	Growing stock (million m ³ o.b.)			
	1990	2000	2005	2010
Predominantly coniferous forest				
Predominantly broadleaved forest				
Mixed forest				

Table 1.2c: Growing stock composition

Species name			Growing stock in forest (million m ³ o.b.)			
Rank	Scientific name	Common name	1990	2000	2005	2010
1 st			FRA T3b			
2 nd						
3 rd						
4 th						
5 th						
6 th						
7 th						
8 th						
9 th						
10 th						
Remaining						
TOTAL						

Note: Rank refers to the order of importance in terms of growing stock, i.e. 1st is the species with the highest growing stock. Year 2010 is the reference year for defining the species list and the order of species.

Country comments:

The year and data reported for 2015
How did you generate values for 2015: <ul style="list-style-type: none"> - the recent available year - extrapolation - assessment based on evidence (e.g. forecast, outlooks, national afforestation programmes, forest policy targets)

Approach to reporting on Growing stock
Please indicate if reported values are according to the FAO definition of Growing stock: Yes <input type="checkbox"/> No <input type="checkbox"/>
<i>If not, please specify relevant thresholds:</i>
Minimum diameter (d.b.h.) used:
Minimum top diameter used:
Minimum branch diameter used:
Is volume above ground or above stump?:

Category	Comments related to data, definitions, etc.	Comments on trend(s)
General comments		
Growing stock on forest area		
... of which available for wood supply		
Growing stock on OWL		
Growing stock on FOWL		
Forest types		

Reporting notes:

- Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table T3b. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>
- Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the "State of Europe's Forests 2011" (www.unecce.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current

international definitions and recommendations . If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “*Country comments*”.

3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010, 2015) noted in the Table, or in a nearest year for which data is available.
5. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
6. The categories “*Coniferous*” and “*Broadleaved*” are determined by tree species and do not represent “Forest types”.

DRAFT

Reporting Form 1.3a: Age structure

Pan-European indicator 1.3: Age structure and/or diameter distribution of forest and other wooded land, classified by forest type and by availability for wood supply.

Related SoEF definitions: Forest, Forest available for wood supply, Stand, Even-aged stand, Development phase, Regeneration phase, Intermediate phase, Mature phase, Forest type, Predominantly coniferous forest, Predominantly broadleaved forest, Mixed forest

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 1.3a1: Age class distribution (area of even-aged stands)

Category	Year	Total area	Development phases (1 000 ha)			
			Regeneration phase	Intermediate phase	Mature phase	Unspecified
Forest: (even-aged stands), of which:	2010					
	2005					
	2000					
	1990					
available for wood supply, of which:	2010					
	2005					
	2000					
	1990					
Predominantly coniferous forest	2010					
	2005					
	2000					
	1990					
Predominantly broadleaved forest	2010					
	2005					
	2000					
	1990					
Mixed forest	2010					
	2005					
	2000					
	1990					

Table 1.3a2: Age class distribution (volume of even-aged stands) in forest available for wood supply

Category	Year	Total area	Development phases (1 000 m ³)			
			Regeneration phase	Intermediate phase	Mature phase	Unspecified
Forest available for wood supply (even-aged stands), of which:	2010					
	2005					
	2000					
	1990					
Predominantly coniferous forest	2010					
	2005					
	2000					
	1990					
Predominantly broadleaved forest	2010					
	2005					
	2000					
	1990					
Mixed forest	2010					
	2005					
	2000					
	1990					

Country comments:**Approach to delineation between even-aged and uneven-aged stands.**

How did you distinguish between even-aged and uneven-aged stands:

Comments to interpretation of development phases.

How did you interpret and defined nationally:

Regeneration phase

Intermediate phase

Mature phase

Unspecified

Category	Comments related to data, definitions, etc.	Comments on trend(s)
Forest: even-aged stands		
...of which available for wood supply		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
2. **Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the "State of Europe's Forests 2011" (www.unecce.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in "Country comments".
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a "central year" (1990, 2000, 2005, 2010) noted in the Tables, or in a nearest year for which data is available.
5. National Correspondents are asked to inter- or extrapolate data for age classes if data derived from inventories is from other than reference dates requested.
6. If data only available for the class "Forest available for wood supply", please provide data for this class and provide the information under "Country comments".

Questionnaire on improved pan-European Indicators for Sustainable Forest Management – 2015

7. National Correspondents should decide themselves how to classify two-layer stands, either “even”- or “uneven”-aged, but the sufficient commenting in “*Country comments*” should be included.
8. National Correspondents are invited to provide additional information on the distribution by species of different rotation lengths in a separate note or under “*Country comments*”.

Reporting Form 1.3b: Diameter distribution

Pan-European indicator 1.3: Age structure and/or diameter distribution of forest and other wooded land, classified by forest type and by availability for wood supply

Related SoEF definitions: Forest, Forest available for wood supply, Stand, Uneven-aged stands

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 1.3b Diameter distribution and total area (uneven-aged stands)

Category	Year	Area (1 000 ha)	Total Volume (1 000 m ³ o.b.)	Volume by diameter classes (1 000 m ³ o.b.)				
				<20 cm	21-40 cm	41-60 cm	>60 cm	Unspecified
Forest: uneven-aged stands	2010							
	2005							
	2000							
	1990							
... of which: Forest available for wood supply	2010							
	2005							
	2000							
	1990							

Country comments:

Approach to determine a diameter structure:

Describe how did you determine diameter structure:

Category	Comments related to data, definitions, etc.	Comments on trend(s)
Total area of uneven-aged forests		
Total volume of uneven-aged forests		
Diameter distribution for uneven-aged forests:		
Diameter distribution for uneven-aged forests available for wood supply:		

Reporting notes:

- Connection with FRA/CFRQ 2015:** this reporting form has not counterparts in the global reporting.
- Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the "State of Europe's Forests 2011" (www.unecce.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in "Country comments".
- Reference years:** The figures for the reporting years refer to the situation in a reference year, a "central year" (1990, 2000, 2005, 2010) noted in the Tables, or in a nearest year for which data is available.
- Diameter classes refer to diameter at breast height (d.b.h.) measured (cm over bark) at a height of 1.3 m above ground.
- If your country has different diameter classes in the national reporting system, please re-group accordingly with a sufficient explanation.
- If data is only available for the class "Forest available for wood supply", please provide data for this class and provide the information under "Country comments".

Questionnaire on improved pan-European Indicators for Sustainable Forest Management – 2015

7. The upper limits of classes are inclusive, i.e. in the diameter class ≤ 20 - the 20 cm diameter is included, in the diameter class 21-40cm – the 40 cm diameter is included in this class, etc.

Reporting Form 1.4: Carbon stock

Pan-European indicator 1.4: Carbon stock of woody biomass on forest and other wooded land.

Related SoEF definitions: Forest, Other wooded land, Carbon in above ground biomass, Carbon in below-ground biomass, Carbon in deadwood, Carbon in litter, Soil carbon.

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 1.4: Carbon stock

Category	Year	Carbon in above-ground and below-ground living biomass		Carbon in deadwood and litter		Soil carbon
		Above-ground	Below-ground	Deadwood	Litter	
Million metric tonnes						
Forest	2015	FRA Table 3e				
	2010					
	2005					
	2000					
	1990					
Other wooded land	2015	FRA Table 3e				
	2010					
	2005					
	2000					
	1990					
Total forest and other wooded land	2015	FRA Table 3e (total)				
	2010					
	2005					
	2000					
	1990					

Country comments:

The year and data reported for 2015
How did you generate values for 2015: <ul style="list-style-type: none"> - the recent available year - extrapolation - assessment based on evidence (e.g. forecast, outlooks, national afforestation programmes, forest policy targets)

Category	Comments related to data, definitions, conversion factors used, etc.	Comments on trend(s)
Carbon stock in above-ground living biomass		
Carbon stock in below-ground living biomass		
Carbon stock in deadwood		
Carbon stock in litter		
Carbon stock in soil	Soil depth:	
Biomass/carbon conversion factor used		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table T3e. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>
2. **Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the “*State of Europe’s Forests 2011*” (www.unecce.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “*Country comments*”.
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010, 2015) noted in the Table, or in a nearest year for which data is available.
4. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
5. Quotes of countries’ official reporting on forest carbon are welcome.
6. Growing stock / biomass conversion factors: please list all conversion factors such as biomass expansion factors and indicate related source of conversion factor if more than one are used.
7. Biomass / carbon conversion factors: please, report in the “*Country comments*” the factors used, also if the default factor has been used.
8. Soil and litter conversion factors: please list all conversion factors and indicate related source of conversion factor if more than one are used.
9. A National Correspondent might wish to provide additional data (in “*Country comments*” or a supplementary table) which would show an “*annual average increment of carbon*” and explain any inconsistency with the data in table 1.4.

Indicator 2.1: Deposition of air pollutants

Pan-European indicator 2.1: Deposition of air pollutants on forest and other wooded land, classified by N, S and base cations

International data provider	Comments
<ul style="list-style-type: none"> ICP Forests (Level II) EU JRC Ispra 	Information for this indicator will be provided separately by IDPs. Information for Indicator 2.1 will not be presented on a country basis; in the publication it will be in the form of maps and/or other graphics.

Rationale:

Deposition of air pollutants is a major external stress factor that has been demonstrated to change soil condition and thus affect ecosystem stability. Direct or indirect adverse effects of deposition have also been demonstrated on forest tree health and ground vegetation composition. Air pollution may also predispose trees to the effects of drought and attack by fungi or insects.

This indicator is mainly linked to indicators 1.4, 2.2, 2.3, 2.4, 3.1, 4.5, 4.8, 5.1 and 5.2.

Variable(s) and measurement units	Reference unit	Measurement units	Reference years
Deposition of sulphur (S) and nitrogen (N)	Sample plots, countries ²	kg/ha/year	Annually (from 2006 to 2012)
Deposition of base cations: N_NH ₄ , N_NO ₃ , S_SO ₄ , Na, Ca	Sample plots	kg/ha/year	Annually (from 1998 to 2012)

Comments by the IDP, relevant to the indicator:

Throughfall and bulk deposition are continuously measured on intensive monitoring plots under ICP Forests Level II. For 2006, data were submitted for 437 plots to the Programme Coordinating Centre of ICP Forests where they are processed and evaluated. The following results are proposed for the 2015 report:

- Two European maps (nitrogen and sulphur) for plotwise mean annual total deposition calculated for a three years mean (2006/07/08) (2010/11/12);
- Time trend curves for total deposition 2001 – 2008 (1998-2012) for ammonium (N_NH₄), nitrate (N_NO₃), sulphate (S_SO₄) and selected base cations;
- Two European maps for critical load exceedance for nutrient nitrogen and acidity deposition calculated (equivalents/ha/year) following the methodology of UNECE/ICP Modelling and Mapping for 1980, 2000 and 2020.

Related definitions, methods and references:

Category	Definition/Method/Reference
Total atmospheric deposition on the forest	Wet-only + dry deposition to the canopy excluding internal ion exchange process. Only for sodium and sulphur, throughfall + stemflow is considered to be equal to total deposition, in some cases also for nitrate (ICP Forests Submanual part VI: "Deposition", www.icp-forests.org).
Critical loads	Simple Mass Balance (SMB) model as the standard model for calculating critical loads for terrestrial ecosystems under the LRTAP Convention (Sverdrup et al. 1990, Sverdrup and De Vries 1994). The SMB model is a single-layer model (ICP Modelling and Mapping part V "Mapping Critical Loads"; www.icpmapping.org).

² For the indicator 2.1, values for an assessment parameter "Percentage of natural ecosystem area at risk of eutrophication for an emission scenario based on current legislation" will be generated for each country.

Indicator 2.2: Soil condition

Pan-European indicator 2.2: Chemical soil properties (pH, CEC, C/N, organic C, base saturation) on forest and other wooded land related to soil acidity and eutrophication, classified by main soil types

International data provider	Comments
<ul style="list-style-type: none"> ICP Forests (Level I, Level II) EC JRC Ispra 	Information for this indicator will be provided separately by IDPs. Information which will be presented on a country basis will be provided to National Correspondents. If a National Correspondent wishes to request any changes to the data provided, these changes must be agreed with the country's ICP Forests focal point and transmitted to ICP Forests Co-ordinating Centre. In addition, other information (not directly referred to a country) for Indicator 2.2. will be presented in the form of maps and/or other graphics.

Rationale:

Soil condition is the basic source of ecosystem stability. Acidification and changes in chemical soil properties directly or indirectly affect crown condition and species composition. Tree resistance to insect attacks and diseases are often correlated to soil condition. In addition ecosystem stability is closely related to nutrient cycling. The existing tendency to acidification and eutrophication of soils and the associated changes in foliar chemistry of many parts in Europe is a potential area of concern.

The base saturation indicates the reserves left in the soil to buffer against further additions of e.g. acidifying substances. The C/N ration, the Cation Exchange Capacity (CEC) as well as the pH and organic C are important key indicators to describe soil acidity and eutrophication.

Depending on the respective soil property, the recommended soil depths are the organic layer and the top 20 cm.

This indicator is mainly linked to indicators 2.1, 2.3, 5.1 and 5.2.

Variable(s) and measurement units	Reference unit	Measurement units	Reference years
Acidity	Sample plots	pH scale	Comparisons between the second (BioSoil, 2006-09) and the first forest soil survey (Vanmechelen et al. 1998) on Level I plots will presumably only be partly possible due to methodological changes.
Cation Exchange Capacity (CEC)	Sample plots	cmol/kg	
C/N	Sample plots, countries ³	C/N ratio	
Base Saturation	Sample plots, soil type	% (sum base cations/CEC)*100	
Organic Carbon Density	Sample plots, regions	g/kg, t/ha	

Comments by the IDP, relevant to the indicator:

Development of soil pH under different deposition scenarios based on dynamic models for ICP Forests Level II plots. The following results are proposed for the 2015 report:

- ...

Related definitions, methods and references:

Category	Definition/Method/Reference
Soil nutrification and acidity	Changes in nutrient balance and acidity over the past 10 years (pH/CEC/C/N ratio) in humus and top soil (-20 cm) level using ICP Forests and its definitions (Vanmechelen et al., 1998).

³ For the indicator 2.2, values for an assessment parameter "C/N index, median value for country" will be generated for each country.

For dynamic soil models	Critical loads (see indicator 2.1) do not provide any information on time scales. Dynamic models are needed to assess time delays of recovery in regions where critical loads cease being exceeded and time delays of damage in regions where critical loads continue to be exceeded. The VSD and the SAFE Model are defined in the ICP Modelling and Mapping Manual (www.icpmapping.org). Either of these to be calculated for ICP Forests Level II plots
--------------------------------	--

DRAFT

Indicator 2.3: Defoliation

Pan-European indicator 2.3: Defoliation of one or more main tree species on forest and other wooded land in each of the defoliation classes "moderate", "severe" and "dead"

International data provider	Comments
<ul style="list-style-type: none"> ICP Forests (Level I) EC JRC Ispra 	Information for this indicator will be provided separately by IDPs and presented to National Correspondents. If a National Correspondent wishes to request any changes to the data provided, these changes must be agreed with the country's ICP Forests focal point and transmitted to ICP Forests Co-ordinating Centre.

Rationale:

Crown defoliation is an indicator giving an estimate of tree condition. Defoliation depends on many stress factors and is therefore a valuable measure to describe the overall forest condition, although the causes of observed defoliation might be non-specific and not quantifiable.

This indicator is mainly linked to indicators 1.2, 2.1, 2.2, 2.4 and 3.1.

Variable(s) and measurement units	Reference unit	Measurement units	Reference years
Mean defoliation of all tree species	Sample plots, countries ⁴	defoliation classes	Annually from 1998 to 2013
Mean defoliation by species	Sample plots, region	defoliation classes	Annually from 1998 to 2013

Comments by the IDP, relevant to the indicator:

Defoliation is annually assessed on large scale plots of the ICP Forests Level I system. In 2008 it has been assessed in 25 countries. Data from plots of the transnational Level I grid are submitted to the Programme Coordinating Centre of ICP Forests where they are processed and evaluated. The following results are proposed for the 2015 report:

- One map with mean plot defoliation 2009 based on transnational data submitted to ICP Forests;
- One map with changes in mean plot defoliation for all tree species (1998 - 2013) based on transnational data submitted to ICP Forests;
- Time trend curves for the main tree species (1998 – 2013) based on transnational data submitted to ICP Forests.

Mean defoliation by species is reported for *Pinus sylvestris*, *Pinus pinaster*, *Picea abies*, *Quercus robur* and *Quercus petraea*, *Fagus sylvatica* and *Quercus ilex*.

Related definitions, methods and references:

Category	Definition/Method/Reference
Defoliation	<p>The crown condition is assessed in terms of defoliation. This parameter describes the lack of foliage for each sample tree (UNECE/EC, 2002)</p> <p>The extent of visually assessed defoliation of trees, as developed by the International Co-operative Programme (ICP Forests) of the Executive Committee for the Convention on Long-range Transboundary Air Pollution in Europe.</p>

⁴ For the indicator 2.2, values for an assessment parameter "Percent of sample trees in defoliation classes 2+3+4" will be generated for each country.

Defoliation classes	<i>Class / Degree of defoliation</i>	<i>Needle/Leaf loss</i>
	0 / none	< 10%
	1 / slight	≥ 10% to < 25%
	2 / moderate	≥ 25% to < 60%
	3 / severe	≥ 60% to <100 %
	4 / dead	100%

DRAFT

Reporting Form 2.4: Forest damage

Pan-European indicator 2.4: Forest and other wooded land with damage, classified by primary damaging agent (abiotic, biotic and human induced) and by forest type

Related SoEF definitions: Forest, Other wooded land, Damage to forest, Primarily damaged by insects and disease, Primarily damaged by wildlife and grazing, Primarily damaged by storm, wind, snow or other identifiable abiotic factors, Primarily human induced, Primarily damaged by fire

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 2.4: Forest area with damage

Category	Year	Total area with damage	Area with damage by different agents						Unspecified / Mixed damage	
			Primarily damaged by biotic agents		Damage primarily human induced		Primarily damaged by abiotic agents	Primarily damaged by fire		
			Insects and disease	Wildlife and grazing	Forest operations	Other	Storm, wind, snow, etc.	Total		of which human induced
1000 ha										
Forest	2010									
	2005									
	2000									
	1990									
Other wooded land	2010									
	2005									
	2000									
	1990									
Total forest and other wooded land	2010									
	2005									
	2000									
	1990									

Country comments:**Criteria applied to reporting damage**

Minimum size of damaged FOWL reported : ha
 Other criteria and minimum thresholds used to determine area as “damaged”:
 Criteria used to determine which agents were “*primarily*” damaging:
 Are damage in protected forests included in the reported figures? : Yes No

Category	Comments related to data, definitions, etc.	Comments on trend(s)
Total area with damage		
Primarily damaged by insects and disease		
Primarily damaged by wildlife and grazing		
Damage primarily human induced forest operations:		

Human-induced damages reported under “ <i>Other</i> ”:		
Primarily damaged by abiotic agents e.g. storm, wind, snow, etc.		
Primarily damaged by fire:		
Unspecified / Mixed damage		

Reporting notes:

- Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
- Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available, not the averages of annually affected areas for the 5-year periods, e.g. 1988-1992 for 1990. National Correspondents are asked for area with damage present in a reference year (as in SoEF 2007). If for example damage occurred in 2001, the area affected should be included in the reporting for 2000, only if effects of the damage are still present in 2005, as well as in the subsequent year(s) (2010) if relevant.
- Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
- It is up to the countries to define the threshold level for the minimum size of damaged forest and other wood land to be reported as well as for criteria and minimum thresholds used to determine area as “damaged”. However, it is recommended to report only damage that have markedly decreased the goods and services that owners/managers may expect from the forest. Description of criteria for assessing the severity of damage should be given in the country comments
- “*Primarily*” is mainly related to the severity of damage. The area damaged by various agents (no matter which kind of agent and how many subsequent agents) should be counted just once.
- Sub-class “*Primarily damaged by biotic agents – Wildlife and grazing*”: this category includes a range of damages by different wildlife, including bark removal by deer and damages caused by rodents. Please use “*Country comments*” to specify types of damages included.
- Sub-class “*Primarily damaged by Fire*”: Please indicate under “*Country comments*” available information on the causes of fires.
- Sub-class “*Primarily damaged by abiotic agents – Storm, wind, snow, etc.*” comprises: Storm, wind, snow, drought, mudflow, avalanche and other identifiable abiotic factors.
- Sub-class “*Damage primarily human induced – Forest operations*”: these include damages incurred in the process of the road building and landings setting, or harvesting damage, incl. through skidding tracks, hauling and transport.
- Sub-class “*Damage primarily human induced - Other*”: these include e.g. damage from visitors to forests; vandalism, etc. Note that human induced fire is not to be reported in this class, but to be specified under “*Country comments*”. Please indicate which “*other*” damage classes are reported here.
- Sub-class “*Unspecified / Mixed damage*”: should include areas where damaging agent is unknown or areas damaged by many agents, where determination of the major agent is impossible.
- Total area damaged should be the sum of damage by individual sub-classes.
- A clear determination of a moment, when a damaged area is reversed to a normal situation is complex, difficult and can vary depending on a type of damage. In the case of the death trees, an area can be considered as regenerated once the damaged stand is replaced by the new generation or in the case of individual trees, the loss is trees is compensated by the growth of the surrounding trees.

Reporting Form 3.1: Increment and fellings

Pan-European indicator 3.1: Balance between net annual increment and annual fellings of wood on forest available for wood supply

Related SoEF definitions: Forest, Forest available for wood supply, Growing stock, Gross annual increment, Net annual increment, Natural losses, Fellings.

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 3.1: Increment and fellings

Category	Year	Gross annual increment	Natural losses	Net annual increment	Fellings	
					Total	... of which: of natural losses
Volume (1000 m ³ o.b.)						
Forest available for wood supply	2010					
	2005					
	2000					
	1990					

Country comments:**Approach to determine “fellings”**

Describe method used to determine “fellings”:

Category	Comments related to data, definitions, etc.	Comments on trend(s)
Gross annual increment		
Natural losses		
Net annual increment		
Total fellings		
Fellings of natural losses		

Reporting notes:

- Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
- Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the “*State of Europe’s Forests 2011*” (www.unece.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “*Country comments*”.
- Reference years:** The figures for the reporting years refer to the average for the 5-year periods 1988-1992, 1998-2002, 2003-2007 and 2008-2012 respectively, not to the data for the “central year” (1990, 2000, 2005, 2010) noted in the Table.
- Growing stock, increment, natural losses and fellings are reported over bark.
- Fellings of natural losses include felling of dead trees and cutting of trees already brought down by natural cause, e.g. by storm.
- If no national data on “*Gross annual increment*”, “*Natural losses*” or “*Fellings of natural losses*” exist, the country should report default values based on information provided in the Tables 1, 2 or 3 (below), rather than leaving the fields empty. If this option is used, it should be clearly indicated under “*Country comments*”.

Default values of gross increment percentage, by growing stock and mean age of stands (Table 1)

Growing stock (m ³ /ha)	Mean age, years	Percentage of gross annual increment, P _{GAI}
up to 100	≤50	5,4
	>50	5,0
101-140	≤50	4,0
	>50	3,8
141-180	≤50	3,7
	>50	3,5
181-220	≤50	3,5
	>50	3,2
221-280	≤50	3,3
	>50	3,0
>280	≤60	3,1
	61-80	2,8
	>80	2,5

Default values of natural losses percentage of gross increment (P_{M0}) and volume percentage of felled dead trees (P_{M0K}) of total natural losses in even-aged stands (Table 2)

Average intensity of thinnings, % of growing stock	Average number of commercial thinnings per rotation	Share of wood obtained from thinnings in total wood harvest	Share of natural losses in gross increment, % P _{M0}	Share of felled dead trees in total natural losses, % P _{M0K}
≤ 20	Irregular	≤5	≥26	10
				50*
	1	6-15	21-25	20
				60*
2	16-25	16-20	30	
			70*	
>20	2	26-35	11-15	40
				80*
	3 and >	≥36	≤10	50
				90*

*Forests that have been damaged by heavy storms, invasion of insects or other agents during reference period

Default values of natural losses percentage of gross increment (P_{M0}) and volume percentage of felled dead trees (P_{M0K}) of total natural losses in uneven-aged stands (Table 3)

Mean annual fellings as percentage of gross increment during reference period, %	Share of natural losses in gross increment, % P _{M0}	Share of felled dead trees in total natural losses, % P _{M0K}
Up to 50% (10-47)	23 (13 – 42)	5 (2 – 25)
51% and more (34-106)	14 (4 – 37)	10 (3 – 27)

Reporting Form 3.2: Roundwood

Pan-European indicator 3.2: Value and quantity of marketed roundwood

Related SoEF definitions: Removals, Roundwood, Industrial roundwood, Woodfuel, , Marketed roundwood.

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 3.2: Removals

Category	Year	Wood removals				
		Total	Industrial roundwood		Woodfuel	
		Volume	Volume	Value	Volume	Value
		1000 m ³ u.b.	1000 m ³ u.b.	1000 national currency	1000 m ³ u.b.	1000 national currency
Roundwood	2012	ECE/FAO prefilled			FRA T4c	
	2011					
	2010	FRA T4c				
	2009					
	2008					
	2007					
	2006					
	2005					
	2004					
	2003					
	2002					
	2001					
	2000					
	1999					
	1998					
	1997					
	1996					
	1995					
	1994					
	1993					
1992						
1991						
1990						
1989						
1988						
... of which marketed	2012					
	2011					
	2010					
	2009					
	2008					
	2007					
	2006					
	2005					
2004						
2003						

	2002					
	2001					
	2000					
	1999					
	1998					
	1997					
	1996					
	1995					
	1994					
	1993					
	1992					
	1991					
	1990					
	1989					
	1988					

Country comments:

Approach applied to reporting on removals
If applicable, bark conversion factor from “ <i>over bark</i> ” to “ <i>under bark</i> ”: Approach used to determine “ <i>marketed</i> ”: Approach used to determine value:

Category	Comments related to data, definitions, etc.	Comments on trend(s)
General comments		
Industrial roundwood removals – Volume		
Industrial roundwood removals – Value		
Woodfuel removals – Volume		
Woodfuel removals - Value		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table T4c. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>
2. **Prefilling:** The pre-filled figures (if any) are drawn from the UNECE/FAO TIMBER database as of June 2013. These data can be also found through the FAOSTAT database at <http://faostat.fao.org/DesktopDefault.aspx?PageID=630&lang=en> and at the UNECE at <http://timber.unece.org/index.php?id=207>.
3. **Reference years:** The figures are reported separately for all years in the 1988-2012 period.
4. **Currency:** Figures for each year should be reported in national currency. Countries should explicitly state what national currency is reported (and for what years if differing) in the table A page 6.
5. Roundwood is to be reported “*under bark*”, please report value(s) of conversion factors, if conversion from “*over bark*” was applied. “*Total removals*” include roundwood removed from all land-use categories, not only from forest or other wooded land.
6. The assessment of “*Total removals*” should also include wood that is removed for subsistence use with the value calculated on the basis of local roadside prices.
7. “*Marketed*” roundwood comprises all roundwood sold on markets. Includes roundwood directly chipped in the forest, but not industry by-products. It excludes roundwood harvested for self-consumption (subsistence) and other forms of uses without market transaction.
8. The value reported should be the market value at the site of removal. If possible, felled (roadside) values should be reported. If a different basis is used (e.g. standing sales value), values should be converted to felled (roadside). In case where values are obtained from a point further down the production chain, transport costs and possible handling and/or processing costs should be discounted. Values and conversion factors used in the calculation should be provided in the comments.

Reporting Form 3.3: Non-wood goods

Pan-European indicator 3.3: Value and quantity of marketed non-wood goods from forest and other wooded land.

Related SoEF definitions: Non-wood goods, Marketed non-wood goods

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 3.3: Non-wood goods (2010):

Rank (value)	Name of (groups of) product	Key species	Unit	Total harvested non-wood goods - quantity	Marketed non-wood goods		NWFP category
					Quantity	Value in 1000 national currency	
1 st	FRA 4b						
2 nd							
3 rd							
4 th							
5 th							
6 th							
7 th							
8 th							
9 th							
10 th							
All other plant products							
All other animal products							
TOTAL							

*/ Please select and insert an appropriate category (code) from the Reporting note 6.

Country comments:

Product (group of products)	Comments related to data, definitions, etc.	Comments on trend(s)*/
1 st		
2 nd		
3 rd		
4 th		
5 th		
6 th		
7 th		
8 th		
9 th		
10 th		
All other plant products		
All other animal products		

*/ Table 3.3 demands information for 2010 only, information on observed trends is welcome.

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table 4b. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>
2. **Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the “*State of Europe’s Forests 2011*” (www.unecce.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “*Country comments*”.
3. **Reporting on trends:** The table demands information for 2010 only, or in a nearest year for which data is available, information on observed trends is welcome.
4. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
5. **Currency:** Figures for each year should be reported in national currency. Countries should explicitly state what national currency is reported (and for what years if differing) in the table A page 6.
6. Non-wood goods categories:

Category	Code
Plant products / raw material	
Food	1
Fodder	2
Raw material for medicine and aromatic products	3
Raw material for colorants and dyes	4
Raw material for utensils, handicrafts & construction	5
Ornamental plants	6
Exudates	7
Other plant products	8
Animal products / raw material	
Living animals	9
Hides, skins and trophies	10
Wild honey and bee-wax	11
Wild meat	12
Raw material for medicine	13
Raw material for colorants	14
Other edible animal products	15
Other non-edible animal products	16

2. “*Marketed*” non-wood goods comprise all non-wood goods sold on markets. It excludes non-wood goods harvested for self-consumption (subsistence) and other forms of uses without market transaction. For the purpose of this reporting the “*Value of Marketed non-wood goods*” in this format should be considered as the synonym of the “*Commercial value of NWFP removals*” reported for FRA2015.
3. Reference area for reporting is “*Total forest and other wooded land*”, not further divided into sub-classes. If data is available for a sub-class “*Forest*” only, please report on this sub-class with explicit reference to “*Forest*” and provide a note under “*Country comments*”. If data is available for certain forest areas or ownership classes (e.g. state forests), but not for others, data should be reported with explicit indication of area (ha) and/or reference to the ownership class.
4. The non-wood good categories “*Ornamental plants*”, “*Living animals*” as well as “*Hides, skins and trophies*” are to be reported in 1000 pieces, all other categories in tonnes. If goods are reported in different measurement units than those recommended, please specify under “*Country comments*”. Products should be reported only when from forest or OWL.
5. “*Food*”: Products from mushroom farms or fruits from trees outside forests, such as orchards, are to be excluded.
6. “*Exudates, raw material for medicine, aromatic products, colorants and dyes*” includes extracts e.g. tannins, raw material for industrial extracts, essential and cosmetic oils.
7. “*Other plant products*” includes other products collected from forest and other wooded land, such as fodder, reproductive material (e.g. seeds, parts of plants) or other plant-based raw material for food and beverages. Note that grazing in the forest should be excluded. Please specify further categories if necessary.
8. “*Wild meat*” (in tonnes) and “*Living animals*” (in 1000 pieces) “*from forest and other wooded land*” is to be understood to include game whose habitat is forest-related or –dependent. Please use expert judgment in classifications and provide information on game classes included under “*Country comments*”. Meat and harvest from game farms are to be excluded. Note that marketed game only is to be included. Licenses for hunting are to be reported as “*Marketed Service*” under “*Reporting Form 3.4: Services*”. Only those marketed living animals that were caught in their natural habitat, should be reported under category “*Living animals*”.

Reporting Form 3.4: Services

Pan-European indicator 3.4: Value of marketed services on forest and other wooded land

Related SoEF definitions: Marketed forest services

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 3.4: Marketed Services (2010)

Rank (value)	Name of service/product	Unit	Service provision		Forest service category*/
			Amount of service/product	Value in 1000 national currency	
1 st					
2 nd					
3 rd					
4 th					
5 th					
6 th					
7 th					
8 th					
9 th					
10 th					
	Remaining total				
Total					

*/ Please select and insert an appropriate category (code) from the Reporting note 7.

Country comments:

Reference area if different from “Total FOWL”, e.g. ownership class or 1000 ha:	
--	--

Category	Comments related to data, definitions, etc.	Comment on trend(s)*/
General comments		

*/ Table 3.4 demands information for 2010 only, information on observed trends is welcome.

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
2. **Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the “*State of Europe’s Forests 2011*” (www.unecce.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “*Country comments*”.

3. Reporting on trends: The table demands information for 2010 only, or in a nearest year for which data is available, information on observed trends is welcome.
4. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
5. **Currency:** Figures for each year should be reported in national currency. Countries should explicitly state what national currency is reported (and for what years if differing) in the table A page 6.
6. Marketed services reported should be forest-dependent or mainly forest-related, but are not necessarily to be marketed by forest owners (e.g. eco-tourism). Forest-related means that forests constitute an essential element of the service marketed. Please provide information on types of services included in the different classes under “*Country comments*”, and report in appropriate sub-classes if possible. Note that only marketed services involving some kind of financial transaction should be included, and not hypothetical values of services that are currently free of cost to users/consumers.
7. Categories of forest services (source: *Study on the Development and Marketing of Non-Market Forest Products and Services*) - more information and the final report of the project is now available at the European Commission Agriculture and Rural Development web page: http://ec.europa.eu/agriculture/analysis/external/forest_products/. For each reported service/product please assign this to the most detailed category from the list below.

Category	Code
Ecological services	1
Water protection	1.1
Soil protection	1.2
Health protection	1.3
Infrastructure protection	1.4
Biospheric services	2
Biodiversity protection	2.1
Climate regulation	2.2
Social services	3
Tourism	3.1
Recreation	3.2
Sport activities	3.3
Amenity services	4
Spiritual services	4.1
Cultural services	4.2
Historical services	4.3
Other services	5

8. Marketed ecological services include those related to indicators 5.1 and 5.2 (protection of soil, water and other environmental functions as well as infrastructure and managed natural resources) on a voluntary contractual basis with compensation or other payments from private or public bodies.
9. Marketed biospheric services include services related to indicator 4.6 (in-situ or ex-situ gene conservation of genetic resources) as well as indicator 4.9 (protected forest area) e.g. nature protection on a voluntary contractual basis with compensation or other payments from private or public bodies (this includes Natura 2000). This class also includes carbon-sequestration related afforestation projects in the context of the Kyoto Protocol – should such projects be included, please specify the amount under “*Country comments*”. Note that the reporting under this category is complementary to reporting under indicator 4.9. While in indicator 4.9 the main objective is to determine the quality of protection, the main focus here is to determine monetary values from market or quasi-market transaction for environmental services.
10. Marketed social services include e.g. hunting or fishing licenses, renting of huts and houses as well as forest-based leisure, sport and outdoor adventure activities and educational services that are not free of cost to consumers (the public, schools ...). Please use “*Country comments*” to report on further criteria used for including different services. Recreational services not exchanged via market transaction are not to be reported. (see also indicator 6.10).
11. Amenity services include those related to spiritual, cultural and historical functions, e.g. sacred, religious, or other forms of spiritual inspiration, sites of worship, landscape features (mountains and waterfalls), “*memories*” in the landscape from past cultural ties, aesthetic enjoyment and inspiration, historic artifacts.
12. Other marketed services include e.g. payments to woodland owners for licenses for gravel extraction, telecommunication masts, wind farms and electricity distribution.
13. The reference area for reporting is “*Total FOWL*”, not further divided into sub-classes “*Forest*” and “*Other wooded land*”. If data is available for some forest areas, e.g. for state forests or sub-class “*Forest*”, please give an expert judgment on the likely value for “*Total forest and other wooded land*”. Please report on actually available data on which expert judgment is based under “*Country comments*”.

Reporting Form 3.5: Forests under management plans

Pan-European indicator 3.5: Proportion of forest and other wooded land under a management plan or equivalent

Related SoEF definitions: Forest management plan, Equivalent of forest management plan

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 3.5a: Forests under management plans

Category	Year	Management plans and Equivalents ¹⁾		
		Management plans	Equivalents	Total
		(1000 ha)		
Forest	2010			FRA T14a
... of which for production				
... of which for protection				
	2005			
	2000			
	1990			
Other wooded land	2010			
	2005			
	2000			
	1990			
Total forest and other wooded land	2010			
	2005			
	2000			
	1990			

¹⁾For the purpose of this table the term "Management plans and equivalents" implies the meaning is the same as "Management plan" in FRA2015, please see definitions.

Table 3.5b: Area of management plans and equivalents that have been registered with official body (2010)

Category	Area with formal plan registered with official body
	(1000 ha)
Forest	
Other wooded land	
Total forest and other wooded land	

Country comments:

Category	Comments related to data, definitions, etc.	Comment on trend(s)
Management plans:	Types of documents included in category "Management plans": Other comments:	
Equivalents:	Types of documents included in category "Equivalents": Other comments:	

Reporting notes:

- Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table T14a. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>
- Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the "State of Europe's Forests 2011" (www.unec.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the

- current international definitions and recommendations . If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “*Country comments*”.
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
 4. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
 5. Figures are to be reported separately and exclusively for the sub- categories. The areas of forest land and of other wooded land covered by the following categories should be reported:
 - a) **forest management plans**, defined by the MCPFE as “ Information (in the form of text, maps, tables and graphs) collected during (periodic) forest inventories at operational forest units level (stands, compartments), and operations planned for individual stands or compartments to reach the management goals (MCPFE, 2002)”;
 - b) **equivalents**, defined by the MCPFE as “Information collected on forest area, at forest management or aggregated forest management unit level (forest blocks, farms, enterprises, watersheds, municipalities, or wider units), and strategies/management activities planned to reach the management or development goals” (MCPFE, 2002).
 6. National correspondents are asked to provide information about the area covered by management plans in 2010, according to the major objective (“*protection*” of “*production*”). The sum of the sub-categories should not be necessarily equal to the “*Total*”, as there maybe areas with plans of unknown/unspecified or multiple focus.
 7. The total area covered is up to 100% of total FOWL. Areas covered by a management plan and an equivalent should thus be counted only once. The same area should **not** be reported both under “*Managements plans*” and “*Equivalents*”.
 8. Management plans must have been written or updated within the last 20 years to qualify for reporting.
 9. Formal management plan. In addition to existing MCPFE definition, “*Management plans or equivalents*” which satisfies all the following conditions:
 - Exists in writing
 - Up-to date (made or revised less than 20 years ago)
 - Prepared and signed by a recognized professional forester
 - Includes mechanism for monitoring progress and, if necessary, adaptation to changed circumstances
 10. Registered with official body. State which body/bodies carries out the registrations (not necessarily national, may be subnational or local). Registration may be compulsory or not (may be linked to access to subsidies). In some countries the official body must approve the contents of the management plan, in others, this is not necessary. Both approved and unapproved plans may be considered “registered”.

Reporting Form 4.1: Tree species composition

Pan-European indicator 4.1: Area of forest and other wooded land, classified by number of tree species occurring and by forest type

Related SoEF definitions: Forest, Other wooded land, Stand, Tree

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 4.1: Tree species composition

Category	Year	Area with number of tree species occurring (1000 ha)			
		1	2-3	4-5	6 +
Forest	2010				
	2005				
	2000				
	1990				
Other wooded land	2010				
	2005				
	2000				
	1990				
Total forest and other wooded land	2010				
	2005				
	2000				
	1990				

Country comments:

Approach to report on tree species composition

Minimum size of trees to be included:

Reference area for the assessment (stand or sample plot):

Category	Comments related to data, definitions, etc.	Comments on trend(s)
General comments		
Area with number of tree species occurring on forest:		
Area with number of tree species occurring on OWL:		
Area with number of tree species occurring on forest and OWL:		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
2. **Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the “State of Europe’s Forests 2011” (www.unece.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “Country comments”.
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
4. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
5. Threshold to include a certain tree species: >5% of basal area by this tree species.
6. Whenever possible, the reference area for the assessment should be the forest stand.

Reporting Form 4.2: Regeneration

Pan-European indicator 4.2: Area of regeneration within even-aged stands and uneven-aged stands, classified by regeneration type

Related SoEF definitions: Forest, Regeneration (natural, by planting and/or seeding, coppice sprouting), Afforestation, Natural expansion of forest

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 4.2a Total forest area by expansion and regeneration

Category	Year	Total area of forest by expansion/regeneration type (1000 ha)		
		Natural expansion and natural regeneration	Afforestation and regeneration by planting and/or seeding	Coppice
Forest	2010			
	2005			
	2000			
	1990			

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
Forest	2010	Fra T1b				
	2005					
	2000					
	1990					

Country comments:

Category	Comments related to data, definitions, etc.	Comments on trend(s)
Total area of forest by expansion/regeneration type:		
Natural expansion and regeneration	Characteristics used to determine the class	
Afforestation and regeneration by planting and/or seeding	Characteristics used to determine the class	
Coppice	Characteristics used to determine the class	
Annual forest expansion and regeneration:		
Natural expansion of forest area		
Regeneration of forest area		

Reporting notes:

1. **Prefilling:** This reporting form has not been prefilled; however, data relevant to this reporting form were requested for the “State of Europe’s Forests 2011” (www.unece.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “Country comments”.
2. The term “*regeneration*” used in this reporting should be understood as a synonym of the term “*reforestation*” used in the FRA/CFRQ, which also includes coppice (<http://www.fao.org/forestry/fra/83059/en>)

Table 4.2a: Total forest area by expansion and regeneration

3. **Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
4. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
5. The mixed forms of regeneration (“*natural regeneration enhanced by planting*” and “*regeneration by planting and/or seeding enhanced by natural regeneration*”) should be reported according to the prevailing form of regeneration. Please describe, how mixed forms of regeneration were reported for this form in “*Country comments*”.
6. The forest area by regeneration categories should sum up to the value of total forest area as this reported in the Table 1.1.

Table 4.2b: Annual forest expansion and regeneration

7. **Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table T1b. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>
8. **Reference years:** The figures for the reporting years refer to the average for the 5-year periods 1988-1992, 1998-2002, 2003-2007 and 2008-2012 respectively, not to the data for the “central year” (1990, 2000, 2005, 2010) noted in the Table.
9. In the table “*Country comments*” countries are requested to provide information on the criteria that were applied to assess annual values of regeneration.
10. In case of those forms of regeneration, where assessment of regenerated area is unfeasible (some partial or selective final fellings) please report the area that corresponds to the share (volume, basal area or crown cover) of felled trees in the regenerated stand. Please explain in comments.

Reporting Form 4.3: Naturalness

Pan-European indicator 4.3: Area of forest and other wooded land, classified by “*undisturbed by man*”, by “*semi-natural*” or by “*plantations*”, each by forest type

Related SoEF definitions: Forest, Other wooded land, Naturalness, Undisturbed by man, Semi-natural, Plantation

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 4.3: Naturalness

Category	Year	Area (1000 ha)		
		Undisturbed by man ¹⁾	Semi-natural	Plantations
Forest	2015	FRA T2a		
	2010			
	2005			
	2000			
	1990			
Other wooded land	2015			
	2010			
	2005			
	2000			
	1990			
Total forest and other wooded land	2015			
	2010			
	2005			
	2000			
	1990			

¹⁾For the purpose of this table the term “(Forest) Undisturbed by man” implies the meaning is the same as “Primary forest” in FRA2015, please see definitions.

Country comments:

The year and data reported for 2015

How did you generate values for 2015:

- the recent available year
- extrapolation
- assessment based on evidence (e.g. forecast, outlooks, national afforestation programmes, forest policy targets)

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*”

Category	Comments related to data, definitions, etc.	Comments on trend(s)
FOWL: undisturbed by man		
FOWL: semi-natural		
FOWL: plantations		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table T2a. For cross-checking with the FRA/CFRQ 2015 reported data, please see the SoEF definition “*Undisturbed by man*”, and FRA/CFRQ 2015 definition “*Primary forest*” at: <http://www.fao.org/forestry/fra/83059/en>.
2. **Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the “State of Europe’s Forests 2011” (www.unece.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “Country comments”.
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
4. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
5. Please ensure that the areas of introduced species included in the category “*plantations*” for this indicator are consistent with the areas reported as “*dominated by introduced tree species*” in the Reporting Form 4.4.

Reporting Form 4.4: Introduced tree species

Pan-European indicator 4.4: Area of stands of forest and other wooded land dominated by introduced tree species

Related SoEF definitions: Forest, Other wooded land, Introduced tree species, Invasive introduced tree species

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 4.4a: Introduced tree species

Category	Year	Area of stands dominated by introduced tree species (1000 ha)	
		Total	...of which: invasive
Forest	2015	FRA T2a	
	2010		FRA T7
	2005		
	2000		
	1990		
Other wooded land	2010		
	2005		
	2000		
	1990		
Total forest and other wooded land	2010		
	2005		
	2000		
	1990		

Table 4.4b. Introduced tree species (2010)

Scientific name of introduced tree species	Forest area occupied (1000 ha)	
	2005	2010

Table 4.4c. Invasive tree species

Scientific name of invasive tree species	Forest area affected (1000 ha)	
	2005	2010
FRA T7		

Country comments:

The year and data reported for 2015
How did you generate values for 2015: <ul style="list-style-type: none"> - the recent available year - extrapolation - assessment based on evidence (e.g. forecast, outlooks, national afforestation programmes, forest policy targets)

Approach applied to reporting on introduced/invasive species:
Reference area for assessment (size of sample plot/average stand): ha
Reference period used to classify as “ <i>introduced</i> ” (years since introduction): years
Criteria or thresholds used to classify species as “ <i>invasive</i> ”:

Category	Comments related to data, definitions, etc.	Comments on trend(s)
General		
FOWL: area dominated by introduced tree species		
FOWL: area dominated by invasive tree species		
Non-woody invasive species		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form is linked to the Tables T2a and T7. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>
2. **Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the “State of Europe’s Forest s 2011” (www.unece.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations . If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “Country comments”.
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
4. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
5. Threshold for stands dominated by introduced tree species is >50 % of basal area by tree species introduced.
6. Introduced tree species (synonyms: non-indigenous species, exotic species, alien species, non-European species): A species, subspecies or lower taxon, occurring outside its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans).
7. Please specify under “*Country comments*” whether your concept of “*introduced*” implies “*introduced to your country*” (the species does not occur naturally within the country borders) or “*introduced to another region within the country*”.
8. Please provide under “*Country comments*” a general information on other invasive plant or animal species (not covered by the Tables 4.4a and 4.4c) that are considered as threatening for forests in your country. If available provide information on species, scale, trends and type of impact they have on forest ecosystems or their elements.

Reporting Form 4.5: Deadwood

Pan-European indicator 4.5: Volume of standing and of lying deadwood on forest and other wooded land, classified by forest type

Related SoEF definitions: Forest, Other wooded land, Deadwood

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 4.5: Deadwood

Category	Year	Volume of deadwood (m ³ /ha)		
		Total	Standing	Lying
Forest	2010			
	2005			
	2000			
	1990			
Other wooded land	2010			
	2005			
	2000			
	1990			
Total forest and other wooded land	2010			
	2005			
	2000			
	1990			
Volume of deadwood in FOWL by species groups:				
Coniferous	2010			
Broadleaved	2010			

Country comments:

Approach applied to reporting on deadwood:	
Please indicate if reported values are according to the recommended minimum sizes: Yes <input type="checkbox"/> No <input type="checkbox"/>	
<i>If not, please specify relevant thresholds:</i>	
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)

Category	Comments related to data, definitions, etc.	Comments on trend(s)
Standing deadwood		
Lying deadwood		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
2. **Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the “State of Europe’s Forests 2011” (www.unece.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “Country comments”.
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
4. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
5. The recommended minimum size of standing and lying dead trees reported under this indicator should be:
 - a. Standing deadwood equal or bigger than 10 cm of d.b.h.;
 - b. Lying deadwood: equal or bigger than 10 cm of diameter measured 1.0 m from the thicker end of a piece of lying deadwood; equal or longer than 1.0 m of lying dead trees.
6. Total volume = sum of standing and lying volume.
7. The required breakdown by “Coniferous” and “Broadleaved” (non-coniferous) refers to the deadwood volume (i.e. not to “forest type”).

Indicator 4.6: Forest genetic diversity

Pan-European indicator 4.6: Area managed for conservation and utilisation of forest tree genetic resources (in situ and ex situ gene conservation) and area managed for seed production

International data provider	Comments
<ul style="list-style-type: none"> European Forest Genetic Resources Programme - EUFORGEN (FAO/IPGRI) Bioversity International 	Information for this indicator will be provided separately by International Data Providers (IDP) - European Forest Genetic Resources Programme - EUFORGEN (FAO/IPGRI), Bioversity International, and presented to National Correspondents. If a National Correspondent wishes to request any changes to the data provided, these changes must be agreed with the country's Bioversity International focal point and transmitted to Bioversity International.

Rationale:

Genetic diversity is the ultimate source of biodiversity at all levels. Genetic resources of species should be conserved for the future, both to secure the width of genetic pools and to allow use of best provenances. A loss of variation may have negative consequences for fitness, for production and may prevent adaptive change in populations in response to climate change, and to properties such as for CO₂ storage.

This indicator is mainly linked to indicator 1.1.

Variable(s) and measurement units	Reference unit	Measurement units	Reference years
Area managed for in situ gene conservation	countries ⁵ , species	ha	1990, 2000, 2010, ...
Area managed for ex situ gene conservation	countries, species	ha	1990, 2000, 2010, ...
Area managed for seed production	countries, species	ha	1990, 2000, 2010, ...

Comments by the IDP, relevant to the indicator:

...

Related definitions, methods and references:

Category	Definition/Method/Reference
Genetic resources	Genetic resources means genetic material of actual or potential value (CBD, 1992)
Ex-situ conservation	The conservation of components of biological diversity outside their natural habitats (CBD, 1992).
In-situ conservation	In-situ conservation means the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties (CBD, 1992).
Seed collection stand	Selected seed source that fulfils certain requirements. As a rule the stand should be autochthonous or its origin must be known, and above all it should be superior to average stands. On occasion, non-indigenous stands showing excellent features are also chosen. Seed collection stands are accepted and registered by the national authority (EFI Forest Glossary, 2001).

⁵ For the indicator 4.6, values for a background parameter "Share of forest land managed for conservation of genetic resources" will be generated for each country.

Indicator 4.7: Landscape pattern

Pan-European indicator 4.7: Landscape-level spatial pattern of forest cover

International data provider	Comments
<ul style="list-style-type: none"> DG JRC Ispra 	Information for this indicator will be provided separately by International Data Provider (IDP) EU JRC Ispra. Information for Indicator 4.7 will not be presented on a country basis; in the publication it will be in the form of maps and/or other graphics.

Rationale:

Landscape-level spatial pattern of forest cover refers to the spatial arrangement (or configuration) of the forested land across the landscape, it reflects the potential of a landscape to provide forest habitats. Fragmentation is a spatial pattern process over time that refers to forest loss and isolation i.e. loss of connectivity. It is one major threat for the conservation of the biodiversity and the ecological functions of forests. The monitoring of connectivity is crucial in the current challenge of alleviating the effects of climate change on species and ecosystems.

Fragmentation historically occurred in many European regions and still does locally despite an overall positive forest area balance in the last 15 years. It can occur permanently due to the expansion of agricultural areas, settlements and transports networks or it may be temporary and recoverable within forested areas after forest operations such as cuttings or replanting.

This indicator is mainly linked to indicator 1.1.

Variable(s) and measurement units	Reference unit	Measurement units	Reference years
Status of equivalent connected area (ECA), for forest-dwelling species with 1km dispersal capability. Idem for 10 km dispersal capability	50 km grid (INSPIRE standards) NUTS 2/3 vector layer for overlay ⁶	ha/50 km fixed area cell	2006, ...
Change in of equivalent connected area (ECA), for forest-dwelling species with 1km dispersal capability. Idem for 10 km dispersal capability	50 km grid (INSPIRE standards) NUTS 2/3 vector layer for overlay	% of change, ranges of increase and decrease (low/medium/high), or stable	1990, 2000, 2006, ...

Comments by the IDP, relevant to the indicator:

There is not yet a common agreed definition and methodology for assessing landscape pattern and its temporal change at the national level. National/regional pattern data, when available, are not harmonized and cannot be used to implement the MCPFE 4.7 indicator.

JRC is contributing a case study on European-wide harmonized implementation of this indicator. For the first time, the status of forest connectivity in 2006 and its change over the last 15 years (1990-2006) are assessed European-wide at fine-scale (spatial details at 1ha Minimum Mapping Unit). The measure is based on topology (inter-patch distances) and patch attributes (area) for forest-dwelling species with specific dispersing capabilities (1km and 10 km). Results are reported per 50 km fixed area grid, which is an analysis unit that best capture local (landscape level) spatial processes without losing too much information. Provinces (Nuts2/3) are also overlaid in the final map product to aid geographical positioning....

⁶ For the indicator 4.7, values for a background parameter “Landscape pattern index: normalised connectivity per landscape unit and average proportion of “core natural” forest” will be generated for each country.

Related definitions, methods and references:

Category	Definition/Method/Reference
Equivalent Connected Area (ECA)	ECA is defined as the size of a single patch (maximally connected) that would provide the same value of the Probability of Connectivity index based on intra and inter-patch connectivity, than the actual habitat pattern. ECA is calculated per 50 km fixed area cell.
Data sources	<p>Data input to calculate ECA:</p> <ul style="list-style-type: none"> • The multi-temporal raster layers of the Pan-European harmonized forest maps (FMap 1990, FMap2000, FMap2006) automatically derived from Landsat ETM+ (30m re-sampled to 25m), scene by scene processing and mosaicking. Geometric accuracy (RMS 95% error less than 25m). Thematic definition and accuracy: forest areas are occupied by forest and woodlands with a vegetation pattern composed of native or exotic coniferous and/or broadleaved trees. Forest is defined as in the CLC nomenclature (Pekkarinen et al, 2009 doi:10.1016/j.isprsjprs.2008.09.004); it is a forest cover class rather than a forest use class. Forest excludes woodlands with trees smaller than 5m height, forest nurseries and regeneration with canopy closure less than 30%, burnt areas and forest roads. Transitional woodlands may be included due to high tree density. Forest layers were validated against the FAO definition using NFIs plot data. • Analysis unit: 50 km grid (INSPIRE standards) • NUTS 2/3 vector layer for overlay.
Method	<p>The method uses a network-based habitat availability index which combines landscape graph theory, a probabilistic connection model and the habitat availability concept. It is based on topology (inter patch distances) and patch attributes (area) for forest dwelling species with a specific dispersal ability.</p> <p>Each link between every two patches is characterized by a probability of dispersal, obtained as a function of distance (a decreasing exponential function of the Euclidean (straight-line) edge-to-edge distance, matching to a probability of 0.5 for the average dispersal distance at focus. Dispersal distances are 1, 5, 10 and 25 km. The matrix (non-forest landscape) is first treated as homogeneous. Precisely, the method used the Equivalent Connected Area (ECA) index, which is a modification of the Probability of Connectivity index (Saura, Estreguil et al, 2010 (accepted) based on an adapted version of the software Conefor Sensinode (Saura and Torne, 2009 at http://www.conefor.udl.es).</p> <p>In addition to the state in connectivity at one point in time, changes in connectivity are also quantified and directly compared with the temporal changes in forest habitat area. The method was already applied at broader scale (25ha MMU) for European forests in the period 1990-2000 (Saura, Estreguil et al., 2010). More information on the methodology can be found at www.forest.jrc.ec.europa.eu/ select forest pattern (see EUR23841, Estreguil and Mouton, 2009)</p>

Reporting Form 4.8: Threatened forest species

Pan-European indicator 4.8: Number of threatened forest species, classified according to IUCN Red List categories in relation to total number of forest species

Related SoEF definitions: Forest species, Vulnerable, Endangered, Critically endangered, Extinct in the wild

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 4.8: Threatened forest species

Category	Year	Total of taxa	Threatened forest species			
			Vulnerable	Endangered	Critically endangered	Extinct in the wild
			Absolute number			
Trees	2010					
	2005					
	2000					
	1990					
Birds	2010					
	2005					
	2000					
	1990					
Mammals	2010					
	2005					
	2000					
	1990					
Other vertebrates	2010					
	2005					
	2000					
	1990					
Invertebrates	2010					
	2005					
	2000					
	1990					
Vascular plants	2010					
	2005					
	2000					
	1990					
Cryptogams and fungi	2010					
	2005					
	2000					
	1990					

Country comments:

Approach applied to reporting on threatened forest species:
Please specify which main taxa in the table and reporting notes are not assessed in your country:
Please describe how species were classified as “forest species” in reporting from your country:

Category	Comments related to data, definitions, etc.	Comments on trend(s)
General comments		
Endangered trees		
Endangered birds		
Endangered mammals		
Endangered other vertebrates		
Endangered invertebrates		
Endangered vascular plants		
Endangered cryptogams and fungi		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
2. **Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the “*State of Europe’s Forests 2011*” (www.unep.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations . If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “*Country comments*”.
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
4. **Data sources:** please report data sources separately for threat classes in case sources differ;
5. Detailed national Red Lists should be used whenever possible.

Reporting Form 4.9: Protected forests

Pan-European indicator 4.9: Area of forest and other wooded land protected to conserve biodiversity, landscapes and specific natural elements, according to MCPFE Assessment Guidelines

Related SoEF definitions: Forest, Other wooded land, MCPFE Classes 1.1, 1.2, 1.3, and Class 2

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 4.9: Protected forests

Category	Year	MCPFE Class 1.1	MCPFE Class 1.2	MCPFE Class 1.3	MCPFE Class 2
		(1000 ha)			
Forest	2015	FRA T6			
	2010				
	2005				
	2000				
	1990				
Other wooded land	2015				
	2010				
	2005				
	2000				
	1990				
Total forest and other wooded land	2015				
	2010				
	2005				
	2000				
	1990				

Country comments:

The year and data reported for 2015
How did you generate values for 2015: <ul style="list-style-type: none"> - the recent available year - extrapolation - assessment based on evidence (e.g. forecast, outlooks, national afforestation programmes, forest policy targets)

Category	Comments related to data, definitions, etc.	Comments on trend(s)
General comments		
For each class please provide an explanation if and how you classified NATURA 2000 areas in your reporting.		
FOWL: MCPFE Class 1.1		
FOWL: MCPFE Class 1.2		
FOWL: MCPFE Class 1.3		
FOWL: MCPFE Class 2		
	-	

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table T6. In general the values reported for FRA should be equal to the sums of values reported for MCPFE Classes 1.1-1.3. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>

2. **Prefilling:** This table has not been prefilled; however, using the data reported for the “*State of Europe’s Forests 2011*” (www.unece.org/forests/fr/outputs/soef2011.html) as the basis, please determine status of protection of the areas reported in the different protection classes in your country for the years 1990, 2000, 2005, 2010 and 2015 as far as possible. Document the process for further reference and use “*Country comments*” for reporting on major aspects. Please also indicate the reason for changing the figures, if new data will replace previously reported results
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
4. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
5. MCPFE classes: see “*Terms and Definitions*”, and MCPFE Assessment Guidelines as well as the relevant Explanatory Note (<http://www.unece.org/forests-welcome/areas-of-work/forestsforestresourceswelcome/forestsfrmethodsandprocesses/soef2015.html>) .

DRAFT

Reporting Form 5: Protective forests – soil, water and other ecosystem functions; – infrastructure and managed natural resources

Pan-European indicator 5.1: Area of forest and other wooded land designated to prevent soil erosion, to preserve water resources, or to maintain other forest ecosystem functions, part of MCPFE Class “*Protective Functions*”

Pan-European indicator 5.2: Area of forest and other wooded land designated to protect infrastructure and managed natural resources against natural hazards, part of MCPFE Class “*Protective Functions*”.

Related SoEF definitions: Forest, Other wooded land, MCPFE Class 3

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 5: Protective forests – soil, water and other ecosystem functions; infrastructure and managed natural resources

Category	Year	Protective forests - MCPFE Class 3		
		Soil, water and other forest ecosystem functions	Infrastructure and managed natural resources	Total
		(1000 ha)		
Forest	2015			
	2010			
	2005			
	2000			
	1990			
Other wooded land	2015			
	2010			
	2005			
	2000			
	1990			
Total forest and other wooded land	2015			
	2010			
	2005			
	2000			
	1990			

Country comments:

The year and data reported for 2015
How did you generate values for 2015: <ul style="list-style-type: none"> - the recent available year - extrapolation - assessment based on evidence (e.g. forecast, outlooks, national afforestation programmes, forest policy targets)

Category	Comments related to data, definitions, etc.	Comments on trend(s)
General comments		
For each class please provide an explanation: <ul style="list-style-type: none"> - how did you designate those areas, e.g.: legal based designation, management plans, other designation types (e.g. survey; slope gradient etc.) - how did you classified NATURA 2000 areas in your reporting. 		

Soil, water and other forest ecosystem functions		
Infrastructure and managed natural resources		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table 5a and 5b6. This information can be used for reporting on protective forests according to MCPFE classes; however, due to differences in classifications the reported totals in the global and pan-European reporting should not be necessary the same. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>
2. **Prefilling:** This table has not been prefilled; however, using the data reported for the “*State of Europe’s Forests 2011*” (www.unece.org/forests/fr/outputs/soef2011.html) as the basis, please determine status of protection of the areas reported in the different protection classes in your country for the years 1990, 2000, 2005, 2010 and 2015 as far as possible. Please document the process for further reference and use “*Country comments*” for reporting on major aspects. Please also indicate the reason for changing the figures, if new data will replace previously reported results
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
4. **Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
5. MCPFE classes: see “*Terms and Definitions*”, and MCPFE Assessment Guidelines as well as the relevant Explanatory Note (<http://www.unece.org/forests-welcome/areas-of-work/forestsforestresourceswelcome/forestsfrmethodsandprocesses/soef2015.html>).
6. The intention of the sub-class “*Infrastructure and managed natural resources*” is to identify those forests where protection of infrastructure and managed natural resources is the primary management objective. “*Infrastructure*” includes roads, railways, settlements, buildings, etc. “*Natural resources*” includes e.g. agricultural land, vineyards, orchards. This class also includes protective forests with the primary management objective being the protection of humans (e.g. from noise or visibility protection).

Reporting Form 6.1: Forest holdings

Pan-European indicator 6.1: Number of forest holdings, classified by ownership categories and size classes

Related SoEF definitions: Forest, Forest holding, Forest ownership, Public ownership, Private ownership, Unknown ownership.

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 6.1: Forest holdings

Category	Year	Total forest area (1000 ha)	Total number of holdings	Area and number of forest holdings in size classes					
				≤10 ha		11 -500 ha		≥ 500 ha	
				Area (1000 ha)	Number of holdings	Area (1000 ha)	Number of holdings	Area (1000 ha)	Number of holdings
In public ownership	2010	FRA T18a							
	2005								
	2000								
	1990								
In private ownership	2010								
	2005								
	2000								
	1990								
Unknown ownership	2010								
	2005								
	2000								
	1990								

Country comments:

Minimum size of forest holding reported, ha:	
---	--

Category	Comments related to data, definitions, etc	Comments on trend(s)
General comments		
Area and number of holdings in public ownership		
Area and number of holdings in private ownership		

Reporting notes:

- Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table T18a. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>
- Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the “*State of Europe’s Forests 2011*” (www.unece.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in “*Country comments*”.
- Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.

4. Report holdings of forest, not holdings of other wooded land. Countries where OWL is a significant part of FOWL area may supply information on Forest and OWL holdings structure under "*Country comments*".
5. Unknown is a category where ownership is unknown, includes areas where ownership is unclear or disputed.

DRAFT

Reporting Form 6.2: Contribution of forest sector to GDP

Pan-European indicator 6.2: Contribution of forestry and manufacturing of wood and paper products to gross domestic product

Related SoEF definitions: Gross Domestic Product, Gross Value Added, ISIC/NACE, Forestry (ISIC/NACE 02), Manufacture of wood and of products of wood (ISIC/NACE 16), Manufacture of paper and paper products (ISIC/NACE 17).

Data sources:

References to sources of information	Quality	Category	Year(s)	Additional comments

Table 6.2: Gross Value Added

Category	Year	Gross Value Added	
		National currency (million)	% of total GVA
Forestry (ISIC/NACE 02)	2010	Eurostat and FAO - prefilled	
	2005	FRA T20	
	2000		
	1990		
Manufacture of wood and articles in wood (ISIC/NACE 16)	2010		
	2005		
	2000		
	1990		
Manufacture of paper and paper products (ISIC/NACE 17)	2010		
	2005		
	2000		
	1990		

Country comments:

Category	Comments related to data, definitions, etc.	Comments on trend(s)
General comments		
Forestry		
Manufacture of wood and articles in wood		
Manufacture of paper and paper products		

Reporting notes:

- Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table 20 for 'Forestry (ISIC/NACE 02). Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>.
- Prefilling:** This table has been prefilled with data extracted from Eurostat Database on National Accounts (2010).
- Reference years:** The figures for the reporting years refer to the situation in a reference year, a "central year" (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
- Currency:** Figures for each year should be reported in national currency. Countries should explicitly state what national currency is reported (and for what years if differing) in the table A page 6.
- For the estimation of contribution to Gross Domestic Product (GDP), data on Gross Value Added (GVA) should be used. GVA measures the contribution to the economy of each individual producer, industry or sector in the

country. The link between GVA and GDP can be defined as: $GVA + \text{taxes on products} - \text{subsidies on products} = \text{GDP}$.

6. The table is prefilled with the Eurostat - National Accounts data. Contacting a statistical officer involved in the national accounts or the statistical correspondent for IEEAF in your country for assistance is advisable. The IEEAF data, if available in your country, can serve as a reference for the category Forestry (ISIC/NACE 02).
7. For 2010 the 2008 NACE/ISIC categories (02, 16, 17) should be used, and for previous years using the corresponding former NACE/ISIC categories (02, 20, 21). Adjustments from the old to the new NACE/ISIC are not needed.
8. Data on GVA for each economic activity should be available from the National Accounts prepared by the country's national statistical authority. If a different source is used, please explain in comments.
9. The main sources for value-added are the following:
 - 1) For EU/EFTA countries
 - a. Eurostat - National Accounts (http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database)
 - b. Eurostat - Integrated Environmental and Economic Accounting for Forests (IEEAF) (http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database)
 - c. Eurostat - Annual detailed enterprise statistics - industry and construction (http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/data/database)
 - 2) For other countries (non-EU):
 - a. UNIDO International Yearbook of Industrial Statistics (publication can be ordered at <http://www.unido.org/resources/publications/flagship-publications/international-yearbook-of-industrial-statistics.html>) and Statistical Country Briefs (<http://www.unido.org/resources/statistics/statistical-country-briefs.html>).
 - b. UNdata - National Accounts Official Country Data (<http://data.un.org/Explorer.aspx?d=SNA>)
 - 3) For all countries (in case statistics cannot be found in Eurostat & UNIDO), statistics available from national Statistics Offices should be checked; main links to the list of sources by country are listed in the publication available at: <http://www.fao.org/docrep/011/k4588e/k4588e00.htm> (see pages 61 to 65).
 - 4) Please note that FAO is preparing an analysis on GVA share of forestry and forest industry. The results of this work (expected by the end of 2013) will be disseminated among the national correspondents.

Reporting Form 6.3: Net revenue

Pan-European indicator 6.3: Net revenue of forest enterprises

Related SoEF definitions: Factor income, Net entrepreneurial income

Data sources:

References to sources of information	Quality	Category	Year(s)	Additional comments

Table 6.3: Factor income and entrepreneurial income

Category	Year	Factor income	Net entrepreneurial income
		National currency (million)	
Forestry (ISIC/NACE 02)	2010	Eurostat - prefilled	
	2005		
	2000		
	1990		

Country comments:

Category	Comments related to data, definitions, etc.	Comments on trend(s)
General comments		
Factor income		
Entrepreneurial income		

Reporting notes:

- Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
- Prefilling:** The table has been prefilled with Eurostat data:
 - 1990, 2000: Eurostat Economic Accounts for Agriculture and Forestry.
*/ National figures
 - 2005, 2010: Eurostat Integrated Environmental and Economic Accounting for Forests.
- Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
- Currency:** Figures for each year should be reported in national currency. Countries should explicitly state what national currency is reported (and for what years if differing) in the table A page 6.
- For countries that completed EUROSTAT Economic Accounts for Forestry, or the economic accounts table in IEEAF, this table has been pre-filled to the extent possible using data from EUROSTAT. These should be validated by the national correspondent, consulting with the person responsible for reporting to EUROSTAT. If information is not available from this source, please consult a statistician responsible for National Accounts, who may be able to assist.
- Factor income** measures the remuneration of all factors of production (land, capital, labour) and represents all the value generated by a unit engaged in a production activity. It can be derived from **Gross Value Added (GVA)** by deducting **fixed capital consumption** (depreciation) to get **net value added**, and then adjusting from basic prices to **factor cost** by subtracting any taxes on production and adding any subsidies on production.
- Net entrepreneurial income** measures the return to the forestry business owner, and consists of the compensation of unpaid labour, remuneration from land belonging to units and the yield arising from the use of capital. It can be derived from **factor income** by subtracting compensation of employees to get **operating surplus**, and then adding any interest received by forestry units organized as companies and deducting any rent and interest payments.
- Source of definitions: Manual on the economic accounts for Agriculture and Forestry EAA/EAF 97 (Rev. 1.1.) http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-27-00-782/EN/KS-27-00-782-EN.PDF

Reporting Form 6.4: Expenditures for services

Pan-European indicator 6.4: Total expenditures for long-term sustainable services from forests

Related SoEF definitions: Forest, Other wooded land, Government expenditures, Government revenues

Data sources:

References to sources of information	Quality	Category	Year(s)	Additional comments

Table 6.4: Government expenditures and revenues for forest related services

Category	Year	National currency (million)
Total expenditures	2010	FRA T17
	2005	
	2000	
	1990	
Gross expenditure on public forests	2010	
	2005	
	2000	
	1990	
Transfer payments to private sector	2010	
	2005	
	2000	
	1990	
Cost of forest administration	2010	
	2005	
	2000	
	1990	
Total revenue	2010	FRA T17
	2005	
	2000	
	1990	
Gross revenue from public forests	2010	
	2005	
	2000	
	1990	
All other government revenues from forestry and forest products	2010	
	2005	
	2000	
	1990	

Country comments:

Category	Comments related to data, definitions, etc.	Comments on trend(s)
General comments		
Gross expenditure on public forests		
Transfer payments to private sector		
Cost of forest administration		
Gross revenue from public forests		
All other government revenues from forestry and forest products - elaborate		

which other revenues were reported under this category		
--	--	--

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table T17. The totals for expenditure and revenues are the sum of the subcategories and should match with the totals reported for 2000, 2005 and 2010 in the CFRQ/FRA2015 table 17. Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>.
2. **Prefilling:** This table has not been prefilled.
3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
4. **Data sources:** reference area for reporting is “*Total FOWL*”, not further divided into sub-classes “*Forest*” and “*Other wooded land*”. If data are available for sub-class “*Forest*” only, please report on this sub-class and provide note under “*Country comments*”. If data are available only for certain forest areas or ownership classes (e.g. state forests), but not for others, data should be reported for these areas or classes, which should be specified in “*Country comments*”.
5. **Currency:** Figures for each year should be reported in national currency. Countries should explicitly state what national currency is reported (and for what years if differing) in the table A page 6.
6. The class “*Gross expenditure on public forests*” includes expenditures for developing or managing the public forests in the country including the forests owned by lower governments such as provinces or local communities.
7. The class “*Transfer payments to private forests*” includes all government expenditures on direct financial incentives (grants or subsidies) paid to non-government and private-sector institutions, enterprises communities or individuals operating in the forest sector to implement forest related activities.
8. The class “*Cost of forest administration*” includes all government expenditure on forestry except expenditure on managing state forests and transfer payments. It refers to the cost of implementing policy and legislation to the entire forest area (i.e. it could also include creation of management plans and some operational activities in some places).
9. The class “*Gross revenue from public forests*” includes all revenues from the domestic production and trade of forest products and services derived from publicly owned forests. For this purpose revenue includes:
Products: roundwood, sawnwood, biomass, wood-based panels, pulp and paper, and non-wood forest products
Services: including concession fees and royalties, stumpage payments, public timber sales revenue, taxes and charges based on forest area or yield, taxes on domestic trade and export of forest products, special levies on forestry activities and payments into forest-related funds, other miscellaneous inspection, licence and administrative fees levied by forest administrations, permit and licence fees for recreation and other forest related activities
10. The class “*All other government revenues from forestry and forest products*” includes government revenues from privately owned forests.
11. The government expenditures and revenues from publicly owned forest related business entities should not be included in this reporting. The defining characteristics of a publicly owned business entity are that they have a distinct legal form and they are established to operate in commercial affairs. These entities can work for the government as well as for the private sector. Special units within the state forest service dealing with for instance timber sales should not be excluded if they are still part of the state forest service and not stand alone business entities.
12. This reporting of total government expenditure and revenue replaces previous different approaches to this indicator. Now the reporting focuses on governments’ expenditures and revenues from public and private forests. It is envisaged that the proposed approach, which is consistent with the one applied in the FRA2015 will also improve the completeness of reporting and availability of data. Furthermore it should allow for a better analysis of public aspects of forest management financing.

Reporting Form 6.5: Forest sector workforce

Pan-European indicator 6.5: Number of persons employed and labour input in the forest sector, classified by gender and age group, education and job characteristics

Related SoEF definitions: Labour Force Survey, Education, Job characteristics

Data sources:

References to sources of information	Quality	Category	Year(s)	Additional comments on the reliability of the data (data collection procedure)

Table 6.5a: Employment (thousand persons) by gender and age

Category	Year	Total	Gender		Age group	
			Male	Female	15-49	50+
Forestry (ISIC/NACE 02)	2010	Eurostat - prefilled				
	2005					
	2000					
	1990					
Manufacture of wood and articles in wood (ISIC/NACE 16)	2010					
	2005					
	2000					
	1990					
Manufacture of paper and paper products (ISIC/NACE 17)	2010					
	2005					
	2000					
	1990					

Table 6.5b: Employment (thousand persons) by education and job characteristics

Category	Year	Education (Categories ISCED 1997)			Job characteristics	
		0-2	3-4	5-6	Employees	Self-employed
Forestry (ISIC/NACE 02)	2010	Eurostat – prefilled				
	2005					
	2000					
	1990					
Manufacture of wood and articles in wood (ISIC/NACE 16)	2010					
	2005					
	2000					
	1990					
Manufacture of paper and paper products (ISIC/NACE 17)	2010					
	2005					
	2000					
	1990					

Country comments:

Scope of employment reported (if not from LFS):	
Comments on employment which is not covered by the sources used:	

Category	Comments related to data, definitions, etc	Comments on trend(s)
General comments		
Total employment		
Employment by gender		
Employment by age group		
Employment by education level		
Employment by job characteristics		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
2. **Prefilling:** the tables have been prefilled; source of pre-filled data: Eurostat Labour Force Survey
3. **Reference years:** In order to obtain more reliable data, average values from three years have been calculated for pre-filling:
1990: 1992-1994
2000: 1999-2001
2005: 2004-2006
2010: 2009-2011
4. The recommended source for all data is the Labour Force Survey (LFS), which provides all the breakdowns requested. If LFS data are not available, please provide the best statistics or estimates from other sources. If using other sources, e.g. survey of businesses, note that the desired scope includes the self-employed, and that forestry (ISIC/NACE 02) is limited to those working primarily in forestry, so excludes e.g. agricultural workers who undertakes some forestry work, or government employees classified as public administration.
5. Countries should extrapolate from the available data to provide estimates for all years requested in the table. For countries in which sample data are based on relatively small numbers in forest sectors, it is recommended to pool data and calculate averages for 3 or 5-year periods around the reporting dates. EUROSTAT will provide the annual data available, with an indication of sample sizes or other indicators of reliability, to enable national correspondents to judge how best to present the data.
6. Report numbers as thousands of persons.
7. If estimating the breakdown by education level using other sources, note that categories 0-2 covers those with no more than lower secondary education, categories 5-6 cover those with tertiary (higher) education, and categories 3-4 cover all others (other secondary and post-secondary), for more details see terms and definitions.
8. The category 'self-employed' should also include unpaid family workers.

Reporting Form 6.6: Occupational safety and health

Pan-European indicator 6.6: Frequency of occupational accidents and occupational diseases in forestry

Related SoEF definitions: Occupational accident, Occupational disease

Data sources:

References to sources of information	Quality	Category	Year(s)	Additional comments

Table 6.6: Occupational accidents

Category	Year	Fatal occupational accidents		Non-fatal occupational accidents	
		Number	Annual rate per 1000 workers	Number	Annual rate per 1000 workers
Forestry (ISIC/NACE 02)	2010				
	2005				
	2000				
	1990				

Country comments:

Threshold for reporting non-fatal accidents:	days of absence
---	-----------------

Category	Comments related to data, definitions, etc.	Comments on trend(s)
General comments		
Fatal accidents		
Non-fatal accidents		
Any comments on occupational diseases		
Short description of the recording/assessment system for the fatal and non-fatal occupational accidents in forestry		

Reporting notes:

- Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
- Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the "State of Europe's Forests 2011" (www.unecce.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in "Country comments".
- Reference years:** The figures for the reporting years refer to the average for the 5-year periods 1988-1992, 1998-2002, 2003-2007 and 2008-2012 respectively, not to the data for the "central year" (1990, 2000, 2005, 2010) noted in the Table above, e.g. 2003-2007 instead of 2005
- Data sources:** please specify sources separately for forest, other wooded land and total FOWL if sources differ.
- Note that rates are expressed per 1000 workers.
- Occupational accidents are occurrences arising out of or in the course of work which result in fatal or non-fatal occupational injury.
- Figures to be reported are for forestry (ISIC/NACE 02). Do not include injuries in wood processing or injuries to the public visiting forests.

Questionnaire on improved pan-European Indicators for Sustainable Forest Management – 2015

8. A possible threshold for reporting a non-fatal accident is whether it results in over 3 days absence from work, but different thresholds may be used for national reporting. Please indicate the threshold used in country specifications.
9. Figures are not requested for occupational diseases, because of the lack of data. If information is available for occupational diseases, please include and explain this in country comments.
10. Please provide a short description of the recording/assessment system for the fatal and non-fatal occupational accidents in your country under country comments.
11. If data are not available please indicate to what extent fatal and non-fatal occupational accidents in forestry are an issue in your country.

Indicator 6.7: Wood consumption

Pan-European indicator 6.7: Consumption per head of wood and products derived from wood

International data provider	Comments
<ul style="list-style-type: none"> • UNECE/FAO 	Information for this indicator will be provided separately by International Data Provider (IDP) – UNECE/FAO Forestry and Timber Section, and presented to National Correspondents. If a National Correspondent wishes to request any changes to the data provided, these changes must be agreed with the country's UNECE/FAO focal point and transmitted to UNECE/FAO.

Rationale:

Sound use of wood, a renewable and environmentally friendly raw material, is an essential part of the sustainable development of the forest and forest products sector. Income from sales of wood and forest products is the most important element in the economic sustainability of the sector.

This indicator demonstrates the intensity of wood consumption, and may be correlated with other indicators, notably population and GDP.

Taken with indicator 6.8 (trade in wood), it indicates how the country's own forest resources contribute to the provision of raw materials for the domestic markets and those abroad and whether this is sustainable.

The use of wood instead of non-renewable raw materials is an indicator of sustainable consumption patterns in a society.

Variable(s) and measurement units	Reference unit	Measurement units	Reference years
Production, Imports, Exports, Apparent Consumption of: <ul style="list-style-type: none"> - Fuelwood, - Other industrial roundwood - Sawnwood, - Wood based panels - Paper and board 	Country ⁷	1000 m ³ EQ, 1000 mt (Paper and board)	Periodical average for 1990, 2000, 2005, 2010, 2013

Comments by the IDP, relevant to the indicator:

1. Data are provided by the International Data Provider (UNECE –JFSQ) in 2014 and countries are asked to provide comment on the data and the trends shown. Revisions to data should be requested through national JFSQ correspondent.
2. The data will be presented as 5-year averages. Annual data is used during the reporting process and will be provided to the national correspondent. Data for the latest period (2013) will be calculated later in the reporting process expecting data for 2013 to become available in the second half 2014.
3. Countries will be asked to provide country specific conversion factors to calculate the roundwood equivalents under "Country comments". These factors can differ between the reporting periods due to technology developments.
4. The (Apparent) consumption is calculated by applying the following equation: (apparent) consumption = production + imports – exports.

⁷ For the indicator 6.7, values for a context parameter "Consumption of wood products per head, 2010-2012, m³ roundwood equivalent, most recent 3-year average" forest" will be generated for each country.

Related definitions, methods and references:

Category	Definition/Method/Reference
(Apparent) consumption per head	(Apparent) consumption is calculated by adding imports to a country's production and subtracting exports. (Apparent) consumption volumes are not adjusted for levels of stocks. It is a proxy for "demand" and "use". Primary processed products (i.e. sawnwood, wood based panels, pulp, paper and board) as well as wood used in the rough and energy wood should be included. Secondary process products (e.g. furniture, paper products, joinery) should not be included to avoid double counting and because of problems with conversion factors.
Data sources	Joint Forest Sector Questionnaire
Method	<p>(Apparent) consumption per head of wood and products derived from wood is calculated according to the formula:</p> $\text{AC per head} = [\text{AC}(\text{SW}) * \text{RWEc} + \text{AC}(\text{WBP}) * \text{RWEc} + \text{AC}(\text{Paper and board}) * \text{RWEc} + \text{AC}(\text{Fuelwood}) + \text{R} (\text{Other Industrial Roundwood})] / \text{Total population (in corresponding year)}$ <p>Where:</p> <ul style="list-style-type: none"> • AC (Apparent consumption) = production + imports – exports • R = Removal • SW = Sawnwood • WBP = Wood-based Panels • RWEc = roundwood equivalent coefficient <p>The default values of the RWEc are for: SW = 1.89 RWE / m³, WBP = 1.64 RWE / m³, Paper and board = 3.60 RWE / mt</p> <p>The (apparent) consumption is expressed in m³ roundwood equivalent. A m³ roundwood equivalent expresses the amount of roundwood needed to produce a m³ of a certain wood product. By expressing consumption in m³ roundwood equivalents, volumes of products with different properties such as sawnwood and panels or different measurement units such as m³ (sawnwood) and (metric) tonne (mt) (paper and board) can be summed together. In addition, by expressing the (apparent) consumption in m³ roundwood equivalents the relationship between the volume of roundwood consumed and the removals from the forest can be expressed.</p>

Indicator 6.8: Trade in wood

Pan-European indicator 6.8: Imports and exports of wood and products derived from wood

International data provider	Comments
<ul style="list-style-type: none"> • UNECE/FAO 	International trade plays an important role in supplying renewable products at competitive prices to consumers worldwide, and help to encourage the economic sustainability of the forest sector in many exporting countries. Knowledge of import and export figures in wood trade are necessary to fully understand information provided under indicator 6.7 (wood consumption).

Rationale:

Sound use of wood, a renewable and environmentally friendly raw material, is an essential part of the sustainable development of the forest and forest products sector. Income from sales of wood and forest products is the most important element in the economic sustainability of the sector.

This indicator demonstrates the intensity of wood consumption, and may be correlated with other indicators, notably population and GDP.

Taken with indicator 6.8 (trade in wood), it indicates how the country's own forest resources contribute to the provision of raw materials for the domestic markets and those abroad and whether this is sustainable.

The use of wood instead of non-renewable raw materials is an indicator of sustainable consumption patterns in a society.

Variable(s) and measurement units	Reference unit	Measurement units	Reference years
Imports, Exportsof: <ul style="list-style-type: none"> - Roundwood (industrial and fuel) - Sawnwood, - Wood based panels - Pulp - Paper and board 	Country ⁸	Volume: 1000 m ³ EQ, 1000 mt (Pulp, Paper and board) Value (1000 national currency)	Periodical averages for 1990, 2000, 2005, 2010, 2013

Comments by the IDP, relevant to the indicator:

1. Data are provided by the International Data Provider (UNECE –JFSQ) next year and countries are asked to provide comment on the presented data and signaled trends.
2. The data will be presented as 5-year averages. Annual data is used during the reporting process and will be provided to the national correspondent. Data for the latest period (2013) will be calculated later in the reporting process expecting data for 2013 to become available in the second half 2014.)

⁸ For the indicator 6.8, values for a background parameter “Net imports of roundwood and forest products as % of apparent consumption(both in m³ roundwood equivalent), most recent 3-year average” will be generated for each country.

Related definitions, methods and references:

Category	Definition/Method/Reference
Imports	<p>Imports of wood and products derived from wood are calculated according to the following formula:</p> $M = M(RW) + M(SW) * RWEc + M(WBP) * RWEc + M(Pulp) * RWEc + M(Paper \text{ and board}) * RWEc$ <p>Where:</p> <ul style="list-style-type: none"> • M = Imports • RW = Roundwood (industrial and fuel) • SW = Sawnwood • WBP = Wood-based Panels • RWEc = roundwood equivalent coefficient <p>The default values of the RWEc are for: SW = 1.89 RWE / m³, WBP = 1.64 RWE / m³, Pulp = 3.86 RWE / mt, Paper and board = 3.60 RWE / mt</p> <p>The imports and exports are expressed in m³ roundwood equivalent and value. A m³ roundwood equivalent expresses the amount of roundwood needed to produce a m³ of a certain wood product. By expressing the trade in m³ roundwood equivalents, volumes of products with different properties such as sawnwood and panels or different measurement units such as m³ (sawnwood) and mt (paper and board) can be summed together. In addition, by expressing trade in m³ roundwood equivalents, the relationship between the volume of roundwood traded and the removals from the forest can be expressed</p>
Exports	<p>Exports of wood and products derived from wood are calculated according to the following formula:</p> $X = X(RW) + X(SW) * RWEc + X(WBP) * RWEc + X(Pulp) * RWEc + X(Paper) * RWEc$ <p>Where:</p> <ul style="list-style-type: none"> • X = Exports • RW = Roundwood (industrial and fuel) • SW = Sawnwood • WBP = Wood-based Panels • RWEc = roundwood equivalent coefficient <p>The default values of the RWEc are for: SW = 1.89 RWE / m³, WBP = 1.64 RWE / m³, Pulp = 3.86 RWE / mt, Paper = 3.60 RWE / mt</p>
Data sources	Joint Forest Sector Questionnaire

Reporting Form 6.9: Energy from wood

Pan-European indicator 6.9: Share of wood energy in total energy consumption, classified by origin of wood

Related SoEF definitions: Forest, Other wooded land, Trees outside forests, Total primary energy supply, Renewable energy, Direct wood fibre sources, Chips and particles, Wood residues, Black liquor, Energy from processed wood-based fuels, Wood pellets, Briquettes, Charcoal, Post consumer recovered wood

Data sources:

References to sources of information	Quality	Category	Original reporting unit*/	Year(s) / annual	Additional comments

*/TJ, ktoe, m³, metric tonnes dry matter, etc.

Table 6.9: Total energy supply from wood

Category	2007		2009		2011	
	(TJ)	(thousand metric tonnes dry matter)	(TJ)	(thousand metric tonnes dry matter)	(TJ)	(thousand metric tonnes dry matter)
Total primary energy supply	JWEE - prefilled					
Total renewable energy supply						
Total energy supply from wood:						
- Energy from direct wood fibre sources:						
of which from forests & other wooded land:						
of which from other land (trees outside forests):						
- Energy from co-products and residues of the wood processing industries:						
of which solid residues (chips, particles, wood residues, bark, <i>excluding</i> processed wood-based fuels):						
- Energy from processed wood-based fuels (pellets, briquettes, charcoal):						
of which imported						
- Energy from post-consumer recovered wood						
- Energy from unknown/unspecified sources						

Country comments:

Approach to reporting on energy from wood
Approach to calculate or estimate wood directly from forests and outside forests (marketed and self-consumption):
Conversion factors used to convert to energy/from energy units:

References to sources of information	Comments related to data, definitions, etc	Comments on trend(s)
General comments		

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
2. **Prefilling:** The categories in the reporting form are fully consistent with the main categories requested by the Joint Wood Energy Enquiry (JWEE). Data from the JWEE are prefilled for countries that replied to the JWEE. More information on the JWEE including the enquiry and the manual is available at: <http://www.unece.org/forests/jwee.html> or at a national correspondent for JWEE in your country.
3. **Reference years:** The figures for the reporting years refer to the situation in an individual reference year (2007, 2009, 2011) noted in the Table.
4. **Reporting on trends:** Countries are asked to report on trends. Please specify if the trend is (partly) the consequence of changes in the scope or coverage of the method used to determine the presented data.
5. **Post-consumer recovered wood:** Used wood arising from construction of buildings or from civil engineering works. Recovered wood from transport (pallets), private households, as well as used wood arising from construction or demolition of buildings or from civil engineering works. (*source*: UNECE/FAO Joint Wood Energy Enquiry 2007).
6. Note that the total *Energy from direct wood fibre sources* may include energy produced from direct wood fibre from unspecified sources: the total value for this category could be larger than the sum of energy from *Forests & other wooded land* and *Other land (trees outside forests)*.
7. Reporting on bioenergy is also requested by the European Union - National Renewable Energy Action Plan (NREAP). Countries are encouraged to consult NREAP data. (http://ec.europa.eu/energy/renewables/action_plan_en.htm), if applicable.

Reporting Form 6.10: Accessibility for recreation

Pan-European indicator 6.10: Area of forest and other wooded land where public has a right of access for recreational purposes and indication of intensity of use

Related SoEF definitions: Forest, Other wooded land, Access for recreation, Area primarily designated or managed for public recreation, Visit

Data sources:

References to sources of information	Quality	Category	Year(s)	Additional comments

Table 6.10a: Accessibility for recreation

Category	Year	Area with access available to the public for recreational purposes		Area primarily designated or managed for public recreation	
		Total (1000 ha)	% of total	Total (1000 ha)	% of total
Total forest and other wooded land	2010			FRA T5b	
	2005				
	2000				
	1990				

Table 6.10b: Intensity of use

Category	Year (latest available)	Intensity of use
		Annual number of visits (million)
Total forest and other wooded land		

Country comments:

Approach to reporting on accessibility for recreation
Criteria used to include areas in "Access available to the public for recreational purposes":
Criteria used to include areas in "Area with recreation as one main management goal":

Category	Comments related to data, definitions, etc.	Comments on trend(s)
Area with access available to the public for recreational purposes		
Area with recreational use as one main management goal		
Intensity of use		

Reporting notes:

- Connection with FRA/CFRQ 2015:** this reporting form is linked to the Table 5b. Within the reported "Area with recreational use as one of main management goal" the area located in forest should be the same as the area reported in FRA2015 table 5b in the row "... Of which public recreation". Please refer to the corresponding FRA/CFRQ guidelines at: <http://www.fao.org/forestry/fra/83059/en>
- Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the "State of Europe's Forests 2011" (www.unec.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in "Country comments".

3. **Reference years:** The figures for the reporting years refer to the situation in a reference year, a “central year” (1990, 2000, 2005, 2010) noted in the Table, or in a nearest year for which data is available.
4. The area in category “*Access available to the public for recreational purposes*” comprises area with a legal right of access as well as areas with no formal legal right, but with customary rights or other de-facto forms of access available to the public. Please outline the criteria used, in “*Country comments*”.
5. For “*Area with recreational use as one of main management goal*”, if information is not available for the scope described in the definition, please provide information for whatever area can be identified that best matches this scope, and describe the basis in country comments. Please outline the criteria used, in “*Country comments*”.
6. For intensity of use, if information on national numbers of visits is only available for a wider scope (e.g. all countryside) or a narrower scope (e.g. forest parks or state forests), please provide numbers for whatever scope best matches the definition and describe the scope under “*Country comments*”. If a different definition of visits is used in national data, please also describe this. Where information is not available on national numbers of forest visits, please provide other information on participation in forest recreation under “*Country comments*”.
7. If you have any questions concerning this indicator please contact Jan Oldenburger, jan.oldenburger@probos.nl or +31 371 466 574.
8. If the information is available only for forest please report this in the Table 6.10 and explain this in “*Country comments*”.

Reporting Form 6.11: Cultural and spiritual values

Pan-European indicator 6.11: Number of sites within forest and other wooded land designated as having cultural or spiritual values

Related SoEF definitions: Forest, Other wooded land, Cultural and spiritual values, Cultural heritage, Forested landscapes with cultural & spiritual values, Trees with cultural & spiritual values, Other sites with cultural and spiritual values

Data sources:

References to sources of information	Quality	Category	Year(s)	Type of inventory	Additional comments

Table 6.11: Cultural and spiritual values

Category	Year (Latest available)	Cultural heritage		Forested landscapes	Trees	Other sites
		Total	of which: associated with historic forest management			
		(number of sites)				
Sites with recognized cultural & spiritual values in forest and other wooded land						

Country comments:

Category	Comments related to data, definitions and trends
Number of cultural heritage sites	
Number of forested landscapes with cultural & spiritual values	
Number of trees with cultural & spiritual values	
Number of other sites with cultural & spiritual values	
General comments by those unable to provide data	

Reporting notes:

1. **Connection with FRA/CFRQ 2015:** this reporting form has not direct counterparts in the global reporting.
2. **Prefilling:** This table has not been prefilled; however, data relevant to this reporting form were requested for the "State of Europe's Forests 2011" (www.unecce.org/forests/fr/outputs/soef2011.html). National correspondents may use that data, if available, as the basis and maintain these figures, providing they are consistent with the current international definitions and recommendations. If new data replaced previously reported values, national correspondents are invited to indicate the reason for changing the figures in "Country comments".
3. **Reference years:** The figures for the reporting years refer to the situation in a latest year for which data is available.
4. **Reporting on trends:** The table demands information for the latest available year only, information on observed trends is welcome.
5. Sites reported here should be sites that are officially and explicitly designated for the protection of cultural and spiritual values and/or are officially recognized for such values, e.g. through governmental bodies, and/or are formally recorded, e.g. in a national database of veteran trees. For each category, please provide details under "Country comments" on which types of sites are included and which types of official recognition apply.

Questionnaire on improved pan-European Indicators for Sustainable Forest Management – 2015

6. Please record each site only once under the category that best reflects its recognized value or designation. Sites may overlap; for example a cultural heritage feature may be located within a larger site recorded under “*Forested landscapes*”.
7. The reference area for reporting is “*Total FOWL*” only, not further divided into sub-classes “*Forest*” and “*Other wooded land*”. If data are available for sub-class “*Forest*” only, please report on this sub-class and provide note under “*Country comments*”.
8. If data are only available for certain forest areas or ownership classes (e.g. state forests), please report these data and provide a note in “*Country comments*” to indicate the area (ha) and/or reference to the ownership class.
9. The latest year to be entered is the year that applies to all or most of the reported figures; if a figure for any category is only available for a substantially different date, please give the relevant date in “*Country comments*” for that category.
10. Please provide details under “*Country comments*” on which types of sites are included for each category.
11. For any category for which data are not available, please provide in “*Country comments*” any available information on the extent or importance of such sites. If no data are available for the whole table, please provide any comments by category as described above, and please also provide any general comments in the final row of “*Country comments*”.
12. Please contact a national expert on this topic as soon as possible during the reporting process, but if you have any questions concerning this indicator you may also contact Jan Oldenburger, jan.oldenburger@probos.nl or +31 371 466 574.

Terms and definitions

(Sorted in order of SFM indicators, not in alphabetical order)

Criterion I

Indicator 1.1

Forest

Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use.

Explanatory notes

1. Forest is determined both by the presence of trees and the absence of other predominant land uses. The trees should be able to reach a minimum height of 5 meters.
2. Includes areas with young trees that have not yet reached but which are expected to reach a canopy cover of at least 10 percent and tree height of 5 meters or more. It also includes areas that are temporarily unstocked due to clear-cutting as part of a forest management practice or natural disasters, and which are expected to be regenerated within 5 years. Local conditions may, in exceptional cases, justify that a longer time frame is used.
3. Includes forest roads, firebreaks and other small open areas; forest in national parks, nature reserves and other protected areas such as those of specific environmental, scientific, historical, cultural or spiritual interest.
4. Includes windbreaks, shelterbelts and corridors of trees with an area of more than 0.5 hectares and width of more than 20 meters.
5. Includes abandoned shifting cultivation land with a regeneration of trees that have, or are expected to reach, a canopy cover of at least 10 percent and tree height of at least 5 meters.
6. Includes areas with mangroves in tidal zones, regardless whether this area is classified as land area or not.
7. Includes rubberwood, cork oak and Christmas tree plantations.
8. Includes areas with bamboo and palms provided that land use, height and canopy cover criteria are met.
9. Excludes tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations, olive orchards and agroforestry systems when crops are grown under tree cover. Note: Some agroforestry systems such as the “Taungya” system where crops are grown only during the first years of the forest rotation should be classified as forest.

(Source: FRA 2015, Working paper 180, page 3)

Forest available for wood supply

Forest where any legal, economic, environmental or other specific restrictions do not have a significant impact on the supply of wood.

Includes: areas where, although there are no such restrictions, harvesting is not taking place, for example areas included in long-term utilization plans or intentions.

(Source: MCPFE 2003, from TBFRA 2000, modified)

Other wooded land

Land not defined as “Forest”, spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.

Explanatory notes:

1. The definition above has two options:
 - a. The canopy cover of trees is between 5 and 10 percent; trees should be higher than 5 meters or able to reach 5 meters, or
 - b. The canopy cover of trees is less than 5 percent but the combined cover of shrubs, bushes and trees is more than 10 percent. Includes areas of shrubs and bushes where no trees are present.
2. Includes areas with trees that will not reach a height of at least 5 meters and with a canopy cover of 10 percent or more, e.g. some alpine tree vegetation types, arid zone mangroves, etc.
3. Includes areas with bamboo and palms provided that land use, height and canopy cover criteria are met.

(*Source:* FRA 2015, Working paper 180, page 4)

Other land

All land that is not classified as forest or other wooded land.

Explanatory notes:

1. Includes agricultural land, meadows and pastures, built-up areas, barren land, land under permanent ice, etc.
2. Includes all areas classified under the sub-category “Other land with tree cover”.

(*Source:* FRA 2015, Working paper 180, page 4)

Other land with tree cover (sub-category)

Land considered as “Other land”, that is predominantly agricultural or urban lands use and has patches of tree cover that span more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity. It includes both forest and non-forest tree species.

Explanatory notes:

1. The difference between Forest and Other land with tree cover is the land use criteria.
2. Includes groups of trees and scattered trees (e.g. trees outside forest) in agricultural landscapes, parks, gardens and around buildings, provided that area, height and canopy cover criteria are met.
3. Includes tree stands in agricultural production systems, for example in fruit tree plantations and agroforestry systems when crops are grown under tree cover. Also includes tree plantations established mainly for other purposes than wood, such as oil palm plantations.
4. Excludes scattered trees with a canopy cover less than 10 percent, small groups of trees covering less than 0.5 hectares and tree lines less than 20 meters wide.

(*Source:* FRA 2015, Working paper 180, page 4)

Forest types

Forest types are classified as follows, based on EUNIS Top Level and TBFRA 2000:

- predominantly broadleaved woodland: Forest on which more than 75 percent of the tree crown cover consists of broadleaved species
- predominantly coniferous woodland: Forest on which more than 75 percent of the tree crown cover consists of coniferous species
- mixed broadleaved and coniferous woodland: Forest on which neither coniferous, nor broadleaved species account for more than 75 percent of the tree crown cover.

(*Source:* SoEF 2003, modified)

Indicator 1.2

Growing stock

Volume over bark of all living trees with a minimum diameter of 10 cm at breast height (or above buttress if these are higher). Includes the stem from ground level up to a top diameter of 0 cm, excluding branches.

Explanatory notes

1. Diameter breast height refers to diameter over bark measured at a height of 1.3 m above ground level, or above buttresses, if these are higher.
2. Includes living trees that are lying on the ground.
3. Excludes smaller branches, twigs, foliage, flowers, seeds, and roots.

(Source: FRA 2015, Working paper 180, page 8)

Broadleaved

All trees classified botanically as *Angiospermae*. They are sometimes referred to as “*non-coniferous*” or “*hardwoods*”.

(Source: TBFRA 2000)

Coniferous

All trees classified botanically as *Gymnospermae*. They are sometimes referred to as “*softwoods*”.

(Source: TBFRA 2000)

Indicator 1.3

Stand

A community of trees possessing sufficient uniformity in composition, age, arrangement or condition to be distinguishable from the forest or other growth on adjoining areas, thus forming a temporary silvicultural or management entity.

(Source: IUFRO, 2000)

Even-aged stand

A stand, in which no or relatively small age differences exist among individual trees within it (usually less than 20% of rotation length), and defining average stand age is meaningful.

(Source: IUFRO, 2000, modified)

Development phase – regeneration phase

Even-aged stand where the mean diameter of the growing stock is below industrial roundwood size and the age of which lower than 20% of the recommended rotation length on the site.

Explanatory note:

1. Includes temporarily unstocked forest areas.

Development phase – mature phase

Even-aged stand with a growing stock mature enough for immediate final felling and of an age that is at least 90% of the recommended rotation length on the site.

Explanatory Notes:

1. Includes stands classified as over-mature.
2. Underproductive forests (i.e. commercial forest lands not meeting minimum stocking standards) where the recommended operation is immediate regeneration should be classified as mature only if the growing stock is mature for final felling with respect to age and/or mean diameter. Otherwise underproductive forests should be classified as regeneration or intermediate phase.

Development phase – intermediate phase

Even-aged stand that is beyond the “regeneration phase” and has not reached the “mature phase” yet.

Development phase – unspecified

Stands, that are classified as even-aged, for which the concept of development classes is irrelevant, e.g. energy or Christmas tree plantations.

Uneven-aged stand

A stand or forest type, consisting of trees of a range of age classes, with age differences which are significant in relation to the stand structure management and rotation length. Defining average stand age is not meaningful. Practised or expected stand management, if any, is continuous forest cover management - selective cuttings, shelter tree cutting, regeneration with small openings etc.

Explanatory Notes:

1. Includes:
 - a. protected forests, recreation areas etc. undergoing a process of formation of uneven-aged structure, where forest management activities are abandoned or support this process,
 - b. previously even-aged stands, in which active management was (intentionally or unintentionally) abandoned and as a result a process of formation of uneven aged structure has started, conditions of site and structure of stand allow for a continuation of that process, and the managerial goal is to continue this process or is not known.
2. Excludes even-aged stands under regeneration, with both mature and young trees present.

(Source: IUFRO, 2000, modified)

Indicator 1.4

Carbon in above-ground biomass

Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.

Explanatory note

1. In cases where forest understory is a relatively small component of the aboveground biomass carbon pool, it is acceptable to exclude it, provided this is done in a consistent manner throughout the time series.

(Source: FRA 2015, Working paper 180, page 9)

Carbon in below-ground biomass

Carbon in all biomass of live roots. Fine roots of less than 2 mm diameter are excluded, because these often cannot be distinguished empirically from soil organic matter or litter.

Explanatory notes:

1. Includes the below-ground part of the stump.
2. The country may use another threshold value than 2 mm for fine roots, but in such a case the threshold value used must be documented.

(Source: FRA 2015, Working paper 180, page 10)

Carbon in dead wood

Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.

Explanatory note:

1. The country may use another threshold value than 10 cm, but in such a case the threshold value used must be documented.

(Source: FRA 2015, Working paper 180, page 10)

Carbon in litter

Carbon in all non-living biomass with a diameter less than the minimum diameter for dead wood (e.g. 10 cm), lying dead in various states of decomposition above the mineral or organic soil.

Explanatory note:

1. Fine roots of less than 2 mm (or other value chosen by the country as diameter limit for below-ground biomass) above the mineral or organic soil are included in the litter where they cannot be distinguished from it empirically.

(Source: FRA 2015, Working paper 180, page 10)

Soil carbon

Organic carbon in mineral and organic soils (including peat) to a soil depth of 30 cm.

Explanatory note:

1. Fine roots of less than 2 mm (or other value chosen by the country as diameter limit for below-ground biomass) are included with soil organic matter where they cannot be distinguished from it empirically.

(Source: FRA 2015, Working paper 180, page 10)

Criterion II

Indicator 2.1 - 2.3

Definitions for these indicators are in the Technical Specifications for reporting by IDP, which is available in separate document prepared for your information.

Indicator 2.4

Damage to forest

Disturbance to the forest which may be caused by biotic or abiotic agents, resulting in death, or a significant loss of vitality, productivity or value of trees and other components of the forest ecosystem.

(Source: MCPFE 2003, TBFRA 2000)

Primarily damaged by insects and disease

Forest and other wooded land where insect attack or disease has been identified as the primary cause of damage.

(*Source*: MCPFE 2003, TBFRA 2000)

Primarily damaged by wildlife and grazing

Forest and other wooded land where damage has been caused by wildlife or grazing by domestic animals. Includes: Grazing or browsing of young plants, preventing or delaying the establishment or regeneration of the stand.

(*Source*: MCPFE 2003, TBFRA 2000)

Primarily damaged by storm, wind, snow or other identifiable abiotic factors

Forest and other wooded land on which the trees have been felled or damaged by storm, wind, snow or other abiotic factors such as avalanches, landslides or flooding.

(*Source*: MCPFE 2003, TBFRA 2000)

Primarily damaged by fire

Forest and other wooded land, the vegetation on which, including the trees, has been wholly or largely destroyed by fire.

(*Source*: MCPFE 2003, TBFRA 2000)

Primarily human induced

Damage primarily human induced – Forest operations: these include damages incurred in the process of the road building and landings setting, or harvesting damage, incl. through skidding tracks, hauling and transport.

Damage primarily human induced - Other: these include e.g. damages caused by pollution from known local sources, damage from visitors to forests; vandalism, etc. Note that human induced fire is not to be reported in this class.

(*Source*: MCPFE 2003, TBFRA 2000)

Unspecified / Mixed damage

Forest or other wooded land damaged by more than one group of causing agents (e.g. both biotic and abiotic) and/or identification of primary cause not possible. Note: if the causing agent is unidentified but known to belong to insects or diseases, area should be reported in that category.

Criterion III

Indicator 3.1

Fellings (annual)

Average standing volume of all trees, living or dead, measured overbark to minimum diameters as defined for “*Growing stock*” that are felled during the given reference period, including the volume of trees or parts of trees that are not removed from the forest, other wooded land or other felling site. Includes: silvicultural and pre-commercial thinnings and cleanings left in the forest; and natural losses that are recovered (harvested).

(*Source*: MCPFE 2003, from TBFRA 2000, modified)

Gross (annual) increment

Average annual volume of increment over the reference period of all trees measured to minimum diameters as defined for “*Growing stock*”.

Explanatory note:

1. Includes the increment on trees which have been felled or die during the reference period.

(Source: TBFRA 2000, modified)

Natural (annual) losses

Average annual losses to the growing stock during the given reference period, measured to minimum diameters as defined for “*Growing stock*”, due to mortality from causes other than cutting by man, e.g. natural mortality, diseases, insects attacks, fire, windthrow or other physical damage.

(Source: TBFRA 2000, modified)

Net (annual) increment

Average annual volume of gross increment over the given reference period less that of natural losses on all trees, measured to minimum diameters as defined for “*Growing stock*”.

(Source: TBFRA 2000, modified, FRA 2015)

Indicator 3.2

Total wood removals

The total of industrial round wood removals and woodfuel removals.

(Source: FRA 2015, Working paper 180, page 12)

Industrial round wood removals (Sub-category)

The wood removed for production of goods and services other than energy production (woodfuel).

Explanatory notes:

1. The term “removal” differs from “felling” as it excludes harvesting losses (stemwood) and trees that were felled but not removed.
2. It includes removals from fellings in earlier period and from trees dead due to or damaged by natural causes.

(Source: FRA 2015, Working paper 180, page 12, modified)

Woodfuel removals (Sub-category)

The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

Explanatory notes:

1. Includes all wood collected or removed for energy purposes, such as fuelwood, wood for charcoal production, harvesting residues, stumps, etc.
2. Includes removals from fellings in an earlier period and from trees killed or damaged by natural causes.
3. Excludes woodfuel which is produced as a by-product or residual matter from industrial processing of roundwood.

(Source: FRA 2015, Working paper 180, page 13)

Roundwood

All roundwood felled or otherwise harvested and removed. It comprises all wood obtained from removals, i.e. the quantities removed from forests and from trees outside the forest, including wood recovered from natural, felling and logging losses during the period, calendar year or forest year. It includes all wood removed with or without bark, including wood removed in its round form, or split, roughly squared or in other form (e.g. branches, roots, stumps and burls (where these are harvested) and wood that is roughly shaped or pointed. It is an aggregate comprising wood fuel (including wood for charcoal) and industrial roundwood (wood in the rough). It is reported in cubic metres solid volume underbark (i.e. excluding bark).

Explanatory notes:

1. Includes roundwood directly chipped in the forest, but not industry by-products. (*Source:* Joint UNECE/FAO/Eurostat/ITTO Forest Sector Questionnaire, 2001, modified).

2. For the purpose of this table, value (of both marketed and non-marketed wood) is defined as the market value at the site of harvest, road side or forest border. If values are obtained from a point further down the production chain, transport costs and possible handling and/or processing costs should be subtracted whenever possible.

(*Source:* FRA 2010 - Non-wood forest products, Working paper 180, page 12, modified)

Marketed roundwood

“Marketed” roundwood comprises all roundwood sold on markets. It excludes round wood harvested for self-consumption (subsistence) and other forms of uses without market transaction.

(*Source:* SoEF2007)

Indicator 3.3

Non-wood goods (NWG)

Goods derived from forests and other wooded land that are tangible and physical objects of biological origin other than wood.

Explanatory notes:

1. Generally includes non-wood plant and animal products collected from areas defined as forest (see definition of forest).
2. Specifically includes the following regardless of whether from natural forests or plantations:
 - gum arabic, rubber/latex and resin;
 - Christmas trees, cork, bamboo and rattan.
3. Generally excludes products collected in tree stands in agricultural production systems, such as fruit tree plantations, oil palm plantations and agroforestry systems when crops are grown under tree cover.
4. Specifically excludes the following:
 - woody raw materials and products, such as chips, charcoal, fuelwood and wood used for tools, household equipment and carvings;
 - grazing in the forest;
 - fish and shellfish.

(*Source:* FRA 2015, *Non-wood forest product*, Working paper 180, page 12, modified)

Marketed non-wood goods

“Marketed” goods comprise all non-wood goods sold on markets. It excludes goods harvested for self-consumption (subsistence) and other forms of uses without market transaction (*based on SoEF2007*). For the purpose of reporting on this variable, value is defined as the commercial market value at the forest (or OWL) gate.

Explanatory note:

1. If values are obtained from a point further down the production chain, transport costs and possible handling and/or processing costs should be subtracted whenever possible.

(*Source: FRA 2015, Non-wood forest product, Working paper 180, page 12*)

Indicator 3.4

Marketed forest services

Marketed forest services comprise recreational, environmental and protective services that are forest-dependent or mainly forest-related, but are not necessarily marketed by forest owners.

Ecological services	Marketed ecological services include those related to indicators 5.1 and 5.2 (soil, water and other environmental functions as well as infrastructure and managed natural resources) on a voluntary contractual basis with compensation or other payments from private or public bodies.	Water protection Soil protection Health protection Infrastructure protection
Biospheric services	Marketed biospheric services include services related to indicator 4.6 (<i>in-situ</i> or <i>ex-situ</i> gene conservation of genetic resources) as well as indicator 4.9 (protected forest area) e.g. nature protection on a voluntary contractual basis with compensation or other payments from private or public bodies (this includes Natura 2000). This class also includes carbon-sequestration related afforestation projects in the context of the Kyoto Protocol – should such projects be included, please specify the amount under “country comments”.	Biodiversity protection Climate regulation
Social services	Marketed social services include e.g. hunting or fishing licences, renting of huts and houses as well as forest-based leisure, sport and outdoor adventure activities and educational services that are not free of cost to consumers (the public, schools, ...).	Tourism Recreation Sport activities
Amenity services	Amenity services include those related to spiritual, cultural and historical functions, e.g. sacred, religious, or other forms of spiritual inspiration, sites of worship, landscape features (mountains and waterfalls), “memories” in the landscape from past cultural ties, aesthetic enjoyment and inspiration, historic artefacts.	Spiritual services Cultural services Historical services
Other marketed services	Other marketed services include e.g. payments to woodland owners for licences for gravel extraction, telecommunication masts, wind farms and electricity distribution.	

Note: the above terms & definitions were formulated in the process of the elaboration of the MCPFE 2007 Enquiry on the basis of existing definitions in different processes.

(*Source: Study on the Development and Marketing of Non-Market Forest Products and Services, European Commission 2008*)

Indicator 3.5

Management plan or equivalent

A written, long-term documented scheme of forest management, aiming at defined management goals, which is periodically revised. These include:

Forest management plans

Information (in the form of text, maps, tables and graphs) collected during (periodic) forest inventories at operational forest units level (stands, compartments), and operations planned for individual stands or compartments to reach the management goals.

... of which for production (sub-category)

Forest management plan mainly focused on production.

... of which for conservation (sub-category)

Forest management plan mainly focused on conservation.

Equivalents

Information collected on forest area, at forest management or aggregated forest management unit level (forest blocks, farms, enterprises, watersheds, municipalities, or wider units), and strategies/management activities planned to reach the management or development goals.

(*Source*: SoEF 2007, FRA 2015 Working paper 180, page 19)

Criteria IV-V

Indicator 4.1

Tree

A woody perennial with a single main stem or, in the case of coppice, with several stems, having a more or less definite crown.

Includes: Bamboos, palms and other woody plants meeting the above criterion.

(*Source*: TBFRA 2000)

Indicator 4.2

Forest expansion

Expansion of forest on land that, until then, was not defined as forest.

(*Source*: FRA 2015, Working paper 180, page 5)

Afforestation (Sub-category)

Establishment of forest through planting and/or deliberate seeding on land that, until then, was not classified as forest.

Explanatory note:

1. Implies a transformation of land use from non-forest to forest.

(*Source*: FRA 2015, Working paper 180, page 5)

Natural expansion of forest (Sub-category)

Expansion of forest through natural succession on land that, until then, was under another land use (e.g. forest succession on land previously used for agriculture).

Explanatory note:

1. Implies a transformation of land use from non-forest to forest.

(Source: FRA 2015, Working paper 180, page 5)

Regeneration (natural, by planting and/or seeding, coppice sprouting)

Regeneration

Re-establishment of a forest stand by natural or artificial means on land classified as forest, following the removal of the previous stand by felling or as a result of natural causes (e.g. fire or storm).

Explanatory notes:

1. Implies no change of land use.
2. Includes planting/seeding of temporarily unstocked forest areas as well as planting/seeding of areas with forest cover.
3. Includes coppice from trees that were originally planted or seeded.

(Source: TBFRA 2000, FRA 2015, *Reforestation*, Working paper 180, page 5, modified).

Natural regeneration

Re-establishment of a forest stand by natural means, i.e. by natural seeding or vegetative regeneration. It may be assisted by human intervention, e.g. by preparatory cutting, scarification or fencing to protect against wildlife damage or domestic animal grazing.

(Source: TBFRA 2000, modified)

Regeneration by planting and/or seeding

The act of re-establishing a forest stand by artificial means, either by planting of seedlings or by scattering seed on land already in forest land use. The material used may be of indigenous or introduced origin.

(Source: TBFRA 2000, FRA 2015, *Artificial reforestation*, Working paper 180, page 6, modified)

Coppice sprouting

The re-growth from coppice stools after the previous stand has been cut.

(Source: TBFRA 2000)

Indicator 4.3

Naturalness

Naturalness is specified in the following classes:

Undisturbed by man (forest/other wooded land)

Forest/other wooded land which shows natural forest dynamics, such as natural tree composition, occurrence of deadwood, natural age structure and natural regeneration processes, the area of which is large enough to maintain its natural characteristics and where there has been no known significant human intervention or where the last significant human intervention was long enough ago to have allowed the natural species composition and processes to have become re-established.

(Source: MCPFE 2003, from TBFRA 2000)

Semi-natural forest/other wooded land

Forest/other wooded land which is neither “forest/other wooded land undisturbed by man” nor “plantation” as defined separately.

(Source: MCPFE 2003, from TBFRA 2000)

Plantation

Forest stand established by planting or/and seeding in the process of afforestation or regeneration. They are either composed of introduced species (see the definition und indicator 4.4), or intensively managed stands of indigenous species which meet all the following criteria: one or two species at plantation, even age class, regular spacing.

Explanatory note:

1. Excludes: Stands which were established as plantations but which have been without intensive management for a significant period of time (more than one rotation period). These should be considered semi-natural.

(*Source:* TBFRA 2000, modified)

Indicator 4.4

Introduced species

A species, subspecies or lower taxon, occurring outside its natural range (past or present) and dispersal potential (i.e. outside the range it occupies naturally or could occupy without direct or indirect introduction or care by humans). Synonyms: non-indigenous species, exotic species, alien species, non-European species.

(*Source:* FRA 2015, Working paper 180, page 6, modified)

Invasive introduced tree species

'Invasive introduced tree' refers to an alien tree species whose introduction and spread threaten ecosystems, habitats or species with socio-cultural, economic and/or environmental harm, and/or harm to human health (*Source:* MCPFE 2003, definition of invasive alien species from UNEP/CBD/COP/6/18/Add.1/Rev.1; 2002. The word "tree" was added).

Alien or alien species refers to a species, subspecies or lower taxon, introduced outside its normal past or present normal distribution; includes any part, gametes, seeds, eggs, or propagates of such species that might survive and subsequently reproduce.

(*Source:* UNEP/CBD/COP/6/18/Add.1/Rev.1; 2002)

Indicator 4.5

Deadwood

Non-living woody biomass either standing or lying on the ground, exceeding specified thresholds.

Explanatory note:

1. Excludes woody biomass contained in the litter, stumps or dead roots.

Indicators 4.6 and 4.7

Definitions for these indicators are in the Technical Specifications for reporting by IDP, which is available in a separate document prepared for your information.

Indicator 4.8

Forest species

A forest species is a species that is dependent on a forest for part or all of its day to day living requirements, or for its reproductive requirements. Therefore, an animal species may be considered a forest species even if it does not live most of its life in a forest.

(*Source:* MCPFE 2003, from AD HOC Technical Expert Group on Forest Biological Diversity, convened by the Secretariat of the CBD to prepare a report for SBSTTA-7, 2001)

Vulnerable

A taxon is vulnerable when it is not critically endangered or endangered but is facing a high risk of extinction in the wild in the medium-near future, as defined by any of the criteria A to E of IUCN (1998).

(*Source*: MCPFE 2003, from IUCN, 1998)

Endangered

A taxon is endangered when it is not critically endangered but is facing a very high risk of extinction in the wild in the near future, as defined by any of the criteria A to E of IUCN (1998).

(*Source*: MCPFE 2003, from IUCN, 1998)

Critically endangered

A taxon is critically endangered when it is facing an extremely high risk of extinction in the wild in the immediate future, as defined by any of the criteria A to E of IUCN (1998).

(*Source*: MCPFE 2003, from IUCN, 1998)

Extinct in the wild

A taxon is extinct in the wild when it is known only to survive in cultivation, in captivity or as a naturalised population (or populations) well outside the past range. A taxon is presumed extinct in the wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxons's life cycle and life form.

(*Source*: MCPFE 2003, from IUCN, 1998)

Indicators 4.9, 5.1, 5.2

MCPFE Class

as defined by the MCPFE Assessment Guidelines for Protected and Protective Forest and Other Wooded Land in Europe

MCPFE Class 1.1: Main Management Objective Biodiversity “No Active Intervention”

- The main management objective is biodiversity
- No active, direct human intervention is taking place
- Activities other than limited public access and non-destructive research not detrimental to the management objective are prevented in the protected area

MCPFE Class 1.2: Main Management Objective Biodiversity “Minimum Intervention”

- The main management objective is biodiversity
- Human intervention is limited to a minimum
- Activities other than listed below are prevented in the protected area:
- Ungulate/game control
- Control of diseases/insect outbreaks^{9/}
- Public access

^{9/} In case of expected large diseases/insect outbreaks control measures using biological methods are allowed provided that no other adequate control possibilities in buffer zones are feasible.

- Fire intervention
- Non-destructive research not detrimental to the management objective
- Subsistence resource use^{10/}

MCPFE Class 1.3: Main Management Objective Biodiversity “Conservation Through Active Management”

- The main management objective is biodiversity
- A management with active interventions directed to achieve the specific conservation goal of the protected area is taking place
- Any resource extraction, harvesting, silvicultural measures detrimental to the management objective as well as other activities negatively affecting the conservation goal are prevented in the protected area

MCPFE Class 2: Main Management Objective “Protection of Landscapes and Specific Natural Elements”

- Interventions are clearly directed to achieve the management goals landscape diversity, cultural, aesthetic, spiritual and historical values, recreation, specific natural elements
- The use of forest resources is restricted
- A clear long-term commitment and an explicit designation as specific protection regime defining a limited area is existing
- Activities negatively affecting characteristics of landscapes or/and specific natural elements mentioned are prevented in the protected area

MCPFE Class 3: Main Management Objective “Protective Functions”

- The management is clearly directed to protect soil and its properties or water quality and quantity or other forest ecosystem functions, or to protect infrastructure and managed natural resources against natural hazards
- Forests and other wooded lands are explicitly designated to fulfil protective functions in management plans or other legally authorised equivalents
- Any operation negatively affecting soil or water or the ability to protect other ecosystem functions, or the ability to protect infrastructure and managed natural resources against natural hazards is prevented

(Source: MCPFE 2003)

Criterion VI

Indicator 6.1

Forest ownership

Generally refers to the legal right to freely and exclusively use, control, transfer, or otherwise benefit from a forest. Ownership can be acquired through transfers such as sales, donations, and inheritance.

Explanatory note:

1. For this reporting table, forest ownership refers to the ownership of the trees growing on land classified as forest, regardless of whether or not the ownership of these trees coincides with the ownership of the land itself.

(Source: FRA 2015, Working paper 180, page 22)

Public ownership

Forest owned by the State; or administrative units of the Public Administration; or by institutions or corporations owned by the Public Administration.

^{10/} Subsistence resource use to cover the needs of indigenous people and local communities, in so far as it will not adversely affect the objectives of management.

Explanatory notes:

1. Includes all the hierarchical levels of Public Administration within a country, e.g. State, Province and Municipality.
2. Shareholder corporations that are partially State-owned, are considered as under public ownership when the State holds a majority of the shares.
3. Public ownership may exclude the possibility to transfer.

(Source: FRA 2015, Working paper 180, page 22)

Private ownership

Forest owned by individuals, families, communities, private cooperatives, corporations and other business entities, private religious and educational institutions, pension or investment funds, NGOs, nature conservation associations and other private institutions.

(Source: FRA 2015, Working paper 180, page 22)

Unknown ownership

Forest area where ownership is unknown, includes areas where ownership is unclear or disputed.

(Source: FRA 2015, Working paper 180, page 23)

Forest holding

One or more parcels of forest and other wooded land which constitute a single unit from the point of view of management or utilization. For State-owned forest and other wooded land a holding may be defined as the area forming a major management unit administered by a senior official, e.g. a Regional Forestry Officer. For forest and other wooded land that is owned publicly, other than by the State, or owned by large-scale forest owners, e.g. forest industries, a holding may constitute a number of separated properties which are, however, managed according to one corporate strategy. Under any category of ownership, other than State-owned, one holding may be the property of one or several owners.

(Source: TBFR 2000, definition as published in SoEF 2007).

Indicator 6.2

Gross Domestic Product

Gross Domestic Product (GDP) is the total market value of all final goods and services produced in a country in a given year. It is equal to total consumer, investment and government spending, plus the value of exports, minus the value of imports. For the estimation of an industry's contribution to GDP, data on Gross Value Added (GVA) should be used. The link between GVA and GDP can be defined as: $GVA + \text{taxes on products} - \text{subsidies on products} = GDP$.

Gross Value Added

Gross Value Added (GVA) measures the contribution to the economy of each individual producer, industry or sector in the country, measured at basic prices. Data on GVA for each industrial sector should be available from the National Accounts prepared by the country's national statistical authority.

ISIC/NACE

ISIC is the International Standard Industrial Classification of All Economic Activities. NACE is the equivalent Statistical Classification of Economic Activities in the European Community.

In ISIC Rev 4 (2008) and NACE Rev 2 (2008), the following categories cover forest industries:

- 02: Forestry and logging.

16: Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials.

17: Manufacture of paper and paper products.

In the previously used ISIC Rev 3.1 (2004) and NACE Rev 1.1 (2002), the corresponding categories were: 02, 20 and 21 (with some minor additions / subtractions). For the reporting years 1990, 2000 and 2005 the corresponding former NACE/ISIC categories 02, 20, 21 can be used. Adjustments from the old to the new NACE/ISIC are not needed.

Forestry and logging (ISIC/NACE 02)

This division includes the production of roundwood for the forest-based manufacturing industries (ISIC divisions 16 and 17) as well as the extraction and gathering of wild growing non-wood forest products. Besides the production of timber, forestry activities result in products that undergo little processing, such as fire wood, charcoal, wood chips and roundwood used in an unprocessed form (e.g. pit-props, pulpwood etc.). These activities can be carried out in natural or planted forests.

The major categories covered by this class are:

- 021 Silviculture and other forestry activities
- 022 Logging
- 023 Gathering of non-wood forest products
- 024 Support services to forestry

(*Source*: International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, Department of Economic and Social Affairs, Statistical Division, United Nations, New York, 2008, page 75)

Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (ISIC/NACE 16)

This division includes the manufacture of wood products, such as lumber, plywood, veneers, wood containers, wood flooring, wood trusses, and prefabricated wood buildings. The production processes include sawing, planing, shaping, laminating, and assembling of wood products starting from logs that are cut into bolts, or lumber that may then be cut further, or shaped by lathes or other shaping tools. The lumber or other transformed wood shapes may also be subsequently planed or smoothed, and assembled into finished products, such as wood containers.

With the exception of sawmilling, this division is subdivided mainly based on the specific products manufactured.

This division does not include the manufacture of furniture (3100), or the installation of wooden fittings and the like (4330).

The major categories covered by this class are:

- 161 Sawmilling and planing of wood,
- 162 Manufacture of products of wood, cork, straw and plaiting materials.

(*Source*: International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, Department of Economic and Social Affairs, Statistical Division, United Nations, New York, 2008, page 102)

Manufacture of paper and paper products (ISIC/NACE 17)

This division includes the manufacture of pulp, paper and converted paper products. The manufacture of these products is grouped together because they constitute a series of vertically connected processes. More than one activity is often carried out in a single unit. There are essentially three activities: The manufacture of pulp involves separating the cellulose fibers from other impurities in wood or used paper. The manufacture of paper involves matting these fibers into a sheet. Converted paper products are made from paper and other materials by various cutting and shaping techniques, including coating and laminating activities. The paper articles may be printed (e.g. wallpaper, gift wrap etc.), as long as the printing of information is not the main purpose.

The production of pulp, paper and paperboard in bulk is included in class 1701, while the remaining classes include the production of further-processed paper and paper products.

(*Source*: International Standard Industrial Classification of All Economic Activities (ISIC), Revision 4, Department of Economic and Social Affairs, Statistical Division, United Nations, New York, 2008, page 105)

Indicator 6.3

Factor income

Factor income measures the remuneration of all factors of production (land, capital, labour) and represents all the value generated by a unit engaged in a production activity. It can be derived from Gross Value Added (GVA) by deducting fixed capital consumption (depreciation) to get net value added, and then adjusting from basic prices to factor cost by subtracting any taxes on production and adding any subsidies on production.

Net entrepreneurial income

Net entrepreneurial income measures the return to the forestry business owner, and consists of the compensation of unpaid labour, remuneration from land belonging to units and the yield arising from the use of capital. It can be derived from factor income by subtracting compensation of employees to get operating surplus, and then adding any interest received by forestry units organized as companies and deducting any rent and interest payments.

Indicator 6.4

Government expenditures

All government expenditure on forest related activities.

Explanatory notes:

1. Correspond to the total budget allocated and spent by all concerned institutions.
2. Include expenditures for administrative functions, reforestation funds, direct support to forest sector (e.g. grants and subsidies) and support to other institutions (e.g. training and research centres).
3. Exclude expenditures in publicly owned business entities.

(Source: FRA 2015, Working paper 180, page 21)

Government revenues

All government revenue collected from the domestic production and trade of forest products and services. For this purpose revenue include:

Goods: roundwood; sawnwood; biomass; wood-based panels; pulp and paper; and non-wood forest products.

Services: including concession fees and royalties, stumpage payments, public timber sales revenue, taxes and charges based on forest area or yield, taxes on domestic trade and export of forest products, special levies on forestry activities and payments into forest-related funds, other miscellaneous inspection, licence and administrative fees levied by forest administrations, permit and licence fees for recreation and other forest related activities.

Explanatory note:

1. It excludes: taxes and charges generally collected from all individuals and enterprises (e.g. corporate taxes, payroll taxes, income taxes, land and property taxes, sales or value-added taxes); import taxes or duties levied on forest products; repayments of government loans

(Source: FRA 2015, *Public expenditure on forestry*, Working paper 180, page 21)

Indicator 6.5

Labour Force Survey

The Labour Force Survey (LFS) is a sample survey carried out in many European countries by interviewing individuals about their personal circumstances and work. Because the LFS is a sample survey, results are subject to sampling error, i.e. the actual proportion of the population in private households with a particular characteristic may differ from the proportion of the LFS sample with that characteristic.

The LFS provides information about people in unemployment and employment. The LFS defines employment as those people aged 16 and over who did at least one hour's paid work in the reference week (either as an employee or self-employed); those who had a job which they were temporarily away from (on holiday for example); those participating in government training and employment programmes; and those doing unpaid family work.

Education

The main levels of the International Standard Classification of Education (*Source*: ISCED 1997), applied from 1998 data onwards, are:

- ISCED 0 – pre-primary education
- ISCED 1 – primary education or first stage of basic education
- ISCED 2 – lower secondary education or second stage of basic education
- ISCED 3 - (upper) secondary education
- ISCED 4 – post-secondary non tertiary education
- ISCED 5 – first stage of tertiary education (not leading directly to an advanced research qualification)
- ISCED 6 – second stage of tertiary education (leading to an advanced research qualification)

For further information visit <http://www.unescobkk.org/fileadmin/user_upload/aims/ISCED_A.pdf>

Job characteristics

Those who own and operate their own business or professional practice, sometimes in conjunction with a partner, are considered as self-employed. The Labour Force Survey (LFS) asks a number of questions to establish a person's employment status; this is based on a respondent's own opinion of whether they are an employee or self-employed. If a different source is used, a relevant distinction is that employees work for wage or salary (in cash or kind) while the self-employed work for profit or family gain (in cash or kind). Family workers are persons doing unpaid work for a business they own or for a business that a relative owns.

Explanatory note:

1. For the purpose of this reporting unpaid family workers should be included in self-employed.

Indicator 6.6

Occupational accident

An occurrence arising out of or in the course of work which results in:

- (a) fatal occupational injury;
- (b) non-fatal occupational injury.

(*Source*: ILO, 1998).

Occupational disease

A disease contracted as a result of an exposure to risk factors arising from work activity

(*Source*: ILO, 1998).

Indicators 6.7 and 6.8

Definitions for these indicators are in the Technical Specifications for reporting by IDP, which is available in a separate document prepared for your information.

Indicator 6.9

Total (national) Primary Energy Supply

represents domestic demand only and is broken down into power generation, other energy sector and total final consumption. This represents inland demand only and (...) excludes international marine and aviation bunkers.

Source: Adapted from International Energy Agency http://www.iea.org/glossary/glossary_T.asp

Renewable energy

energy that is derived from natural processes (e.g. sunlight and wind) that are replenished at a higher rate than they are consumed. Solar, wind, geothermal, hydro, and biomass are common sources of renewable energy.

Source: International Energy Agency http://www.iea.org/glossary/glossary_R.asp

Direct wood fibre sources

(...) any wood fibre that enters the energy production without any further treatment or conversion. It comprises removals from forests and outside. This comprises also any wood (...) from “*Other Wooded Land*” (OWL) and “*Trees Outside Forests*” (...). It comprises any woody biomass from any land use and covers amongst others infrastructure maintenance (roads, railway, power transmission lines, pipelines, etc.), hedgerows, agricultural residues from fruit tree orchards, wood from gardens and parks, etc. It comprises any form of woody biomass, such as green chips, roundwood or split, stacked or loose from any part of the trees such as roots, stemwood and branches, fruits and shells.

Source: http://www.unece.org/fileadmin/DAM/timber/wood_energy/jwee-2011-eng.xlsx and http://www.unece.org/fileadmin/DAM/timber/wood_energy/JWEE2011manual.pdf)

Chips and particles

Wood that has been reduced to small pieces and is suitable for pulping, for particle board and/or fibreboard production, for use as a fuel, or for other purposes. It excludes wood chips made directly in the forest from roundwood (i.e. already counted as pulpwood, round and split). It is reported in cubic metres solid volume excluding bark.

Source: UNECE/FAO/EUROSTAT/ITTO Joint Forest Sector Questionnaire (<http://timber.unece.org/fileadmin/DAM/other/definitions-e-2008a.doc>)

Wood residues

The volume of roundwood that is left over after the production of forest products in the forest processing industry (i.e. forest processing residues) and that has not been reduced to chips or particles. It includes sawmill rejects, slabs, edgings and trimmings, veneer log cores, veneer rejects, sawdust, residues from carpentry and joinery production, etc. It excludes wood chips made either directly in the forest from roundwood or made from residues (i.e. already counted as pulpwood, round and split or wood chips and particles). It is reported in cubic metres solid volume excluding bark.

Source: UNECE/FAO/EUROSTAT/ITTO Joint Forest Sector Questionnaire (<http://timber.unece.org/fileadmin/DAM/other/definitions-e-2008a.doc>)

Black liquor

Alkaline spent liquor obtained from digesters in the production of sulphate or soda pulp during the process of paper production, in which the energy content is mainly originating from the content of lignin removed from the wood in the pulping process.

Source: UNECE/FAO Joint Wood Energy Enquiry 2011, Taken from FAO Unified Bioenergy Terminology (http://www.unece.org/fileadmin/DAM/timber/wood_energy/jwee-2011-eng.xlsx and http://www.unece.org/fileadmin/DAM/timber/wood_energy/JWEE2011manual.pdf).

Energy from processed wood-based fuels

Secondary (processed) biofuels in the form of solids (e. g. charcoal), liquids (e. g. alcohol, vegetable oil), or gases (e. g. biogas as a mixture of methane and carbon dioxide), can be used for a wider range of applications with higher efficiency rates on average, including transport and high-temperature industrial processes.

Source: UNECE/FAO Joint Wood Energy Enquiry 2011, Taken from FAO Unified Bioenergy Terminology (http://www.unece.org/fileadmin/DAM/timber/wood_energy/jwee-2011-eng.xlsx and http://www.unece.org/fileadmin/DAM/timber/wood_energy/JWEE2011manual.pdf)

Wood pellets

Cylindrical products which have been agglomerated either directly by compression or by the addition of a small quantity of binder, having a diameter not exceeding 25 mm and a length not exceeding 45 mm.

Source: Combined Nomenclature 2009, subheading 4401 20 30; Commission regulation (EC) No 1031/2008 of 19 September 2008 (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:291:0001:0894:EN:PDF>)

Briquettes

Densified biofuel made with or without pressing aids in the form of cubiform or cylindrical units, produced by compressing pulverized biomass. The raw material for briquettes can be woody biomass (...) are usually manufactured in a piston press. The total moisture of the biofuel briquette is usually less than 15 % of mass. (The JWEE 2011 assumes water content of 8 %).

Source: UNECE/FAO Joint Wood Energy Enquiry 2011, Taken from FAO Unified Bioenergy Terminology (http://www.unece.org/fileadmin/DAM/timber/wood_energy/jwee-2011-eng.xlsx and http://www.unece.org/fileadmin/DAM/timber/wood_energy/JWEE2011manual.pdf)

Charcoal

Wood carbonized by partial combustion or the application of heat from external sources. It includes charcoal used as a fuel or for other uses, e.g. as a reduction agent in metallurgy or as an absorption or filtration medium. It is reported in metric tonnes.”

Source: UNECE/FAO/EUROSTAT/ITTO Joint Forest Sector Questionnaire (<http://timber.unece.org/fileadmin/DAM/other/definitions-e-2008a.doc>)

Post consumer recovered wood

Used wood arising from construction of buildings or from civil engineering works.

Recovered wood from transport (pallets), private households, as well as used wood arising from construction or demolition of buildings or from civil engineering works.

Source: UNECE/FAO Joint Wood Energy Enquiry 2011, Taken from FAO Unified Bioenergy Terminology (http://www.unece.org/fileadmin/DAM/timber/wood_energy/jwee-2011-eng.xlsx and http://www.unece.org/fileadmin/DAM/timber/wood_energy/JWEE2011manual.pdf).

Indicator 6.10:

Access for recreation

The area in category “Area with access available to the public for recreational purposes” comprises area with a legal right of access, as well as areas with no formal legal right, but with customary rights or other de-facto forms of access available to the public. Areas to be excluded are those where access is legally forbidden, and areas with no formal legal right that are also not accessible in practice.

Area primarily designated or managed for public recreation

Forest area designated or managed for public recreation.

Explanatory notes:

1. Includes forest areas where recreational hunting or collection of (edible) non-timber forest products are allowed, but specifically excludes areas where these are collected for sale or subsistence.
2. Includes forest areas designated in management plans, or be provided for in national legislation that allows free access of the public to land for recreation, on public, private or communal lands.

(Source: FRA 2015, *Public recreation*, Working paper 180, page 14)

Visit

A “*Visit*” is a visit for recreational purposes to any area of forest or other wooded land. There is no minimum duration and it is not necessary to undertake any specific activities. Visits for work purposes and travel through the forest for purposes other than recreation are excluded. Each individual participant, including children, counts as one visit. If several different forests are visited on one trip, then the trip only counts as one visit, but if an individual makes two or more separate trips to forests during one day, then each counts as a separate visit.

(Source: SoEF 2011).

Indicator 6.11:

Cultural and spiritual values

This category includes “*cultural heritage*”, “*forested landscapes*”, “*trees*” and “*other sites*” with recognized cultural and spiritual values. Cultural heritage sites can be either “*of the forest*”, and hence historically associated with its management, or “*in the forest*”, with no significant historical connection to the surrounding forest. Forested landscapes with cultural & spiritual values may also be termed ‘*cultural landscapes*’ where forest or other wooded land is the primary component. Trees with cultural and spiritual values include veteran and heritage trees. Other sites include contemporary artistic features, woodland burial sites, and sites of ceremonies and performances.

(Source: SoEF 2011).

Cultural heritage

This category includes all recognized archaeological and historical sites and features. Archaeological sites and features may include those associated with human artefacts, usually as discovered by excavation, surveys, or through disturbance during forest operations. Historical sites and features may include the remains of old buildings and monuments, and also locations of historical importance (e.g. battle sites) even if no remains are present. There is no commonly agreed distinction between ‘*archaeological*’ and ‘*historical*’ and for this reason the two types of site are combined in the reporting form.

Cultural heritage sites can be considered in two categories: sites “*of the forest*” and sites “*in the forest*”. Sites “*of the forest*” include monuments, buildings or other historic artefacts associated with the past management of the forest (or its constituents). In the reporting form they are referred to as sites “*associated with historic forest management*.” Examples may include: boundary banks and dykes, charcoal-burning platforms, saw pits, some bloomery and blast furnace sites, tar production sites, kilns, water mills and lades, features associated with game management and for transporting forest products. The forest was an essential component in their use, and they would not have been created if the forest had not existed. The kinds of historic forest management that these sites were associated with may include ancient wood pastures, historic planted forests, and stands of old industrial or pre-industrial coppice, coppice with standards, pollards, shredded or other ‘*working trees*’ for the production of acorns, fodder, tar, resins and other products. Evidence of such management may be found in “*organically evolved landscapes*” (see definition of “*Forested landscapes with cultural & spiritual values*”).

Sites “*in the forest*” include all other archaeological and historical sites, where the forest itself is not an important aspect of its heritage value. Often, such sites may predate the forest, which has subsequently grown up around it. Examples include: ancient settlements, fortifications, burial mounds, earthworks, field systems and other evidence of historic farming practices, standing stones, and military, funerary, industrial and domestic monuments, churchyards,

crosses and memorials, battle sites, historic places of assembly or ceremony, castles, bridges, roads and transport structures. (*Source*: SoEF 2011).

Forested landscapes with cultural & spiritual values

Forested landscapes with cultural and spiritual values may also be termed ‘*cultural landscapes*’ where forest or other wooded land is the primary component. The term ‘*cultural landscape*’ embraces a diversity of manifestations of the interaction between humankind and its natural environment. Such landscapes fall into three main types:

- a) Landscape designed and created intentionally by humans, often for aesthetic reasons, including historic and contemporary designed forested landscapes;
- b) Organically evolved landscape, either ‘*relict*’ (or fossil), in which an evolutionary process came to an end at some point in the past, or ‘*continuing*’, which retains an active social role in contemporary society closely associated with the traditional way of life, and in which the evolutionary process is still in progress;
- c) Associative cultural landscape, which is recognized primarily for its religious, artistic or cultural associations with the natural element rather than any material cultural evidence (*Source*: UNESCO, 2008. Operational Guidelines for the Implementation of the World Heritage Convention, Annex 3).

All three types may be recognized for their contemporary aesthetic, amenity or recreational values. This category includes sites with geological and other non-biological natural elements such as mountains or waterfalls of recognized cultural and spiritual value. All the area reported under MCPFE Protected Forest Area Class 2 (Protection of Landscapes and Specific Natural Elements) should be recorded here as number of sites, as well as other sites recognized for similar values to those in Class 2 that are not protected.

(*Source*: SoEF 2011).

Trees with cultural & spiritual values

This category includes individual veteran trees, heritage trees, champion trees and trees associated with religious and spiritual practices and beliefs. It also includes groups of trees that are too small to be classed as “*forested landscapes*” such as hedges, avenues and groves. Veteran (or ancient) trees can be defined as trees that are old relative to others of the same species, and are of interest biologically, aesthetically or culturally because of their age. For example, a birch tree may be considered to be a veteran at 200 years old, while a yew may have to survive for at least 1000 years before it can be considered ancient. Veteran ‘*working trees*’ include those that were coppiced, pollarded, shredded, etc, as part of historic management practices. Heritage trees can be defined as trees that are revered for their historical, cultural or botanical significance, for example because they are very old, have interesting historical associations such as ‘*witness trees*’ that were present at the scene of notable historic events, or are ‘*champion trees*’ of record dimensions (girth, height, amount of timber, etc).

(*Source*: SoEF 2011).

Other sites with cultural & spiritual values

These include sites of contemporary cultural and spiritual importance, such as venues for cultural performances, ceremonies or gatherings, sites of sculptures and other installation art, and sites of recent woodland burial. Such sites may have historical associations, but they are recorded under this category rather than under “*Cultural heritage*” if their current use is recognized as more important than their historic use.

(*Source*: SoEF 2011).