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The Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions important at the global, national and local scales, and play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Forest Resources Assessment Programme. This country report forms part of the Global Forest Resources Assessment 2005 (FRA 2005), which is the most comprehensive assessment to date. More than 800 people have been involved, including 172 national correspondents and their colleagues, an Advisory Group, international experts, FAO staff, consultants and volunteers. Information has been collated from 229 countries and territories for three points in time: 1990, 2000 and 2005.

The reporting framework for FRA 2005 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes more than 40 variables related to the extent, condition, uses and values of forest resources. More information on the FRA 2005 process and the results - including all the country reports - is available on the FRA 2005 Web site (www.fao.org/forestry/fra2005).

The Global Forest Resources Assessment process is coordinated by the Forestry Department at FAO headquarters in Rome. The contact person for matters related to FRA 2005 is:

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The Global Forest Resources Assessment 2005 Country Report Series is designed to document and make available the information forming the basis for the FRA 2005 reports. The Country Reports have been compiled by officially nominated country correspondents in collaboration with FAO staff. Prior to finalisation, these reports were subject to validation by forestry authorities in the respective countries.

Report preparation and contact person

Liechtenstein has not nominated a National Correspondent to FRA 2005 and no report has been received from the country.

This report is the result of a desk study prepared by the FRA 2005 secretariat in Rome, which summarizes existing available information using the established format for FRA 2005 country reports. The main data source is UNECE/ FAO, 2000, complemented by more recent information when found.

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1 Table T1 – Extent of Forest and Other wooded land

1.1 FRA 2005 Categories and definitions

Category	Definition
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 <i>in situ</i> . It does not include land that is predominantly under agricultural or urban land use.
Other wooded land	Land not classified 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 <i>in situ</i> ; 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.
Other land	All land that is not classified as “Forest” or “Other wooded land”.
Other land with tree cover (Subordinated to “Other land”)	Land classified as “Other land”, spanning 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.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.

1.2 National data

1.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand		Forest, OWL	1995, 1975	Secondary data source.
MCPFE, 2003. State of Europe’s Forests 2003				Secondary data source.
FAO, 2001. Global Forest Resources Assessment 2000. FAO Forestry Paper 140.			1990, 2000	Secondary data source.
FAOSTAT data, 2004.		Total area, Land area		

The UNECE 2000 does not report the origin of the published information:

1.2.2 Classification and definitions

The classification and definitions used in the UNECE/FAO report are the same as those being used by FRA 2005.

1.2.3 Original data

Source: UNECE/FAO 2000, Reference year: 1995 and 1975

Category	Area (1000 ha)	
	1975	1995
Forest	5.3	6.9
Other wooded land	0.5	0.5
Sub-total Forest and Other wooded land	5.8	7.4
Other land		
Sub-total Land area	16	16
Inland water	0	0
Total area	16	16

1.3 Analysis and processing of national data

1.3.1 Calibration

The areas reported by UNECE are identical to the areas reported by FAOSTAT, hence no calibration is needed.

1.3.2 Estimation and forecasting

UNECE reports an average annual increase of 80 ha per year in the area of Forest between 1975 and 1995. No other source has been found indicating that any other change rate should be used. The updated MCPFE State of Europe's Forests 2003 does not indicate any change in Forest and Other wooded land area. Hence, the change rate between 1995 and 2004 is assumed to be 0 percent, and the same figures (1995) are used for 2000 and 2005. No change is reported for Other wooded land between 1975 and 1995. Consequently, the change is assumed to be 0 percent.

1.4 Reclassification into FRA 2005 classes

No further reclassification is needed, as the national data already are presented according to the FRA 2005 categories.

1.5 Data for National reporting table T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Forest	6.5	6.9	6.9
Other wooded land	0.5	0.5	0.5
Other land ¹	9	8.6	8.6
...of which with tree cover	NDA	NDA	NDA
Inland water bodies	0	0	0
TOTAL	16	16	16

1. The area Other land is calculated by subtracting Forest and Other wooded land area from total area.

2 Table T2 – Ownership of Forest and Other wooded land

2.1 FRA 2005 Categories and definitions

Category	Definition
Private ownership	Land owned by individuals, families, private co-operatives, corporations, industries, religious and educational institutions, pension or investment funds, and other private institutions.
Public ownership	Land owned by the State (national, state and regional governments) or government-owned institutions or corporations or other public bodies including cities, municipalities, villages and communes.
Other ownership	Land that is not classified either as “Public ownership” or as “Private ownership”.

2.2 National data

2.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand (TBFRA 2000)		Ownership	1995	Secondary data source.
MCPFE, 2003. State of Europe's Forests 2003				Secondary data source.

2.2.2 Classification and definitions

The definitions of public and private ownership according to UNECE/FAO 2000 are the same as those being used by FRA 2005.

2.2.3 Original data

Source: UNECE/FAO 2000, Reference year 1995

Category	Forest	OWL
Public ownership	6	1
Private ownership	1	0

Rounded values

Category	Area (1 000 hectares)		
	Forest	OWL	Forest & OWL
Public ownership	6.4	0.5	6.9
Private ownership	0.5	0	0.5
Total are	6.9	0.5	7.4

2.3 Analysis and processing of national data

2.3.1 Calibration

The areas reported by UNECE are identical to those reported by FAOSTAT, hence no calibration is needed.

2.3.2 Estimation and forecasting

The UNECE reports figures on ownership only for the reference year 1995. No source of information has been found for other reference years. Hence, the 1995 figures have been used for the reporting year 2000. To get the figure for 1990 the percentage of Forests and Other wooded land in 1995 that were categorized as: private ownership and public ownership was applied to the 1990 Forest and Other wooded land area (T1).

2.4 Reclassification into FRA 2005 classes

No further reclassification is needed, as the national data already are presented according to the FRA 2005 categories.

2.5 Data for National reporting table T2

FRA 2005 Categories	Area (1000 hectares)			
	Forest		Other wooded land	
	1990	2000	1990	2000
Private ownership	0.5	0.5	0	0
Public ownership	6.0	6.4	0.5	0.5
Other ownership	0	0	0	0
TOTAL	6.5	6.9	0.5	0.5

3 Table T3 – Designated function of Forest and Other wooded land

3.1 FRA 2005 Categories and definitions

Types of designation

Category	Definition
Primary function	A designated function is considered to be primary when it is significantly more important than other functions. This includes areas that are legally or voluntarily set aside for specific purposes.
Total area with function	Total area where a specific function has been designated, regardless whether it is primary or not.

Designation categories

Category / Designated function	Definition
Production	Forest / Other wooded land designated for production and extraction of forest goods, including both wood and non-wood forest products.
Protection of soil and water	Forest / Other wooded land designated for protection of soil and water.
Conservation of biodiversity	Forest / Other wooded land designated for conservation of biological diversity.
Social services	Forest / Other wooded land designated for the provision of social services.
Multiple purpose	Forest / Other wooded land designated to any combination of: production of goods, protection of soil and water, conservation of biodiversity and provision of social services and where none of these alone can be considered as being significantly more important than the others.
No or unknown function	Forest / Other wooded land for which a specific function has not been designated or where designated function is unknown.

3.2 National data

3.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand		Areas available for wood supply	1995	Secondary data source.

3.2.2 Original data

The UNECE/FAO reports that the whole forested area in Liechtenstein (1995) is managed according to a strictly binding management plan. The objective of forest management embraces all activities intended to preserve multiple use forest ecosystems which are able to sustainably satisfy certain human needs as regards forest goods and non-material forest services on the one hand and the needs of plant and fauna species as regards conservation and amelioration of living conditions on the other. According to the multiple functions plan, the predominance of functions is as follows: protection function 40 percent; wood production 32 percent; nature protection 20 percent; recreational function eight percent.

Forest area from T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	2000	2005
Forest	6.5	6.9	6.9

Multiple function plan	Forest area (1 000 hectares)		
	1990	2000	2005
Protection function (40%)	2.60	2.76	2.76
Wood production (32%)	2.08	2.21	2.21
Nature protection (20%)	1.30	1.38	1.38
Recreational function (8%)	0.52	0.55	0.55
Total	6.5	6.9	6.9

3.3 Analysis and processing of national data

3.3.1 Calibration

No calibration has been made.

3.3.2 Estimation and forecasting

No estimation and forecasting have been done. The 1995 figures have been used for 1990, 2000 and 2005.

3.4 Reclassification into FRA 2005 classes

National Class	FRA 2005 Categories (primary functions)					
	Production	Protection	Conservation	Social services	Multiple purpose	No or unknown
Protection function	100%					
Wood production		100%				
Nature protection			100%			
Recreational function				100%		

3.5 Data for National reporting table T3

FRA 2005 Categories / Designated function	Area (1000 hectares)					
	Primary function			Total area with function		
	1990	2000	2005	1990	2000	2005
Forest						
Production	2.60	2.76	2.76	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Protection of soil and water	2.08	2.21	2.21	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Conservation of biodiversity	1.30	1.38	1.38	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Social services	0.52	0.55	0.55	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Multiple purpose				not appl.	not appl.	not appl.
No or unknown function				not appl.	not appl.	not appl.
Total - Forest	6,5	6,9	6,9	not appl.	not appl.	not appl.
Other wooded land						
Production				<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Protection of soil and water				<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Conservation of biodiversity				<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Social services				<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Multiple purpose				not appl.	not appl.	not appl.
No or unknown function	0.5	0.5	0.5	not appl.	not appl.	not appl.
Total – Other wooded land	0,5	0,5	0,5	not appl.	not appl.	not appl.

4 Table T4 – Characteristics of Forest and Other wooded land

4.1 FRA 2005 Categories and definitions

Category	Definition
Primary	Forest / Other wooded land of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Modified natural	Forest / Other wooded land of naturally regenerated native species where there are clearly visible indications of human activities.
Semi-natural	Forest / Other wooded land of native species, established through planting, seeding or assisted natural regeneration.
Productive plantation	Forest / Other wooded land of introduced species, and in some cases native species, established through planting or seeding mainly for production of wood or non wood goods.
Protective plantation	Forest / Other wooded land of native or introduced species, established through planting or seeding mainly for provision of services.

4.2 National data

4.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand		Areas available for wood supply	1995	Secondary data source.

4.2.2 Classification and definitions

National class	Definition
Semi-natural forest/other wooded land	Forest / Other wooded land that is neither “Forest / Other wooded land undisturbed by man” nor “Plantation”.
Plantation(s)	Forest stands established by planting or/and seeding in the process of afforestation or reforestation. They are either: <ul style="list-style-type: none"> • Of introduced species (all planted stands), or • Intensively managed stands of indigenous species which meet all the following criteria: one or two species at plantation, even age class, regular spacing.

Note that the term “Semi-natural” as defined above corresponds to both “Semi-natural” and “Modified natural” in the FRA 2005 definition.

4.2.3 Original data

UNECE/FAO reports the following figures for reference year 1995:

Category	Area
Forests	
Undisturbed by man	1.5
Semi-natural	5.1
Plantations	0.3
Other wooded land	
Undisturbed by man	0.3
Semi-natural	0.2

4.3 Analysis and processing of national data

4.3.1 Calibration

No calibration has been done.

4.3.2 Estimation and forecasting

The 1995 figures have been used for 2000 and 2005. To get the figure for 1990 the percentage of forests in 1995 that were categorized as: undisturbed by man, semi-natural and plantations was applied to the 1990 Forest area (T1).

4.4 Reclassification into FRA 2005 classes

In order to reclassify the national data for the category “semi-natural” into the FRA 2005 categories, some knowledge on regeneration methods used are indispensable. As such information is lacking, all the area reported by UNECE/FAO as “semi-natural” has been assigned to the “Modified natural” category. Likewise, all area reported as “Plantations” has been assigned to the “Productive plantation” category.

4.5 Data for National reporting table T4

FRA 2005 Categories	Area (1000 hectares)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Primary ¹⁾	1.5	1.5	1.5	0.3	0.3	0.3
Modified natural ²⁾	4.8	5.1	5.1	0.2	0.2	0.2
Semi-natural						
Productive plantation ²⁾	0.2	0.3	0.3			
Protective plantation						
TOTAL	6.5	6.9	6.9	0.5	0.5	0.5

¹⁾ It is assumed that the area of “Primary forest” remains unchanged

²⁾ Includes both “Modified natural” and “semi-natural”

³⁾ Includes all forest plantations, independently whether for production or protection

5 Table T5 – Growing stock Table T4

5.1 FRA 2005 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees more than X cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm.
Commercial growing stock	The part of the growing stock of species that are considered as commercial or potentially commercial under current market conditions, and with a diameter at breast height of Z cm or more.

5.2 National data

5.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand			1995	Secondary data source. Growing stock information is a secretariat estimate based on different (unspecified) information sources

5.2.2 Classification and definitions

National class	Definition
Growing stock	The living tree component of the standing volume
Growing stock on forest available for wood supply	GS on forest where legal, economic or specific environmental restrictions do not have any significant impact on the supply of wood

5.2.3 Original data

Source: UNECE/FAO 2000 (UNECE secretariat estimate), reference year 1995

Growing stock on Forest	1 750 000 m ³
...of which available for wood supply	1 400 000 m ³

For Other wooded land, UNECE/FAO 2000 does not provide any information, and no other data sources have been found.

5.3 Analysis and processing of national data

5.3.1 Calibration

No calibration was needed.

5.3.2 Estimation and forecasting

The 1995 figures have been used for 2000 and 2005. The 1990 figure has been calculated by using the volume per hectare (253.6 m³/ha) figure for 1995 multiplied by the total forest area for 1990. The equivalent proportion of 1995 figure for Commercial growing stock has been applied for the 1990 Commercial growing stock.

5.4 Reclassification into FRA 2005 classes

The growing stock available for wood supply has been assumed to correspond to Commercial growing stock, although the definitions are not entirely identical. The FRA 2005 category Commercial growing stock is a subset of commercial or potentially commercial species above a certain diameter limit, growing on areas available for wood supply, while the UNECE category is the total growing stock on areas available for wood supply. Therefore, the FRA 2005 category should be somewhat less than the UNECE figures. However, there is no information available for estimating a percentage for reclassification.

5.5 Data for National reporting table T5

FRA 2005 Categories	Volume (million cubic meters over bark)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Growing stock	1.65	1.75	1.75	NDA	NDA	NDA
Commercial growing stock	1.32	1.40	1.40	NDA	NDA	NDA

Specification of country threshold values	Unit	Value	Complementary information
1. Minimum diameter at breast height of trees included in Growing stock (X)	cm	NDA	
2. Minimum diameter at the top end of stem (Y) for calculation of Growing stock	cm	NDA	
3. Minimum diameter of branches included in Growing stock (W)	cm	NDA	
4. Minimum diameter at breast height of trees in Commercial growing stock (Z)	cm	NDA	
5. Volume refers to “Above ground” (AG) or “Above stump” (AS)	AG / AS	NDA	
6. Have any of the above thresholds (points 1 to 4) changed since 1990	Yes/No	NDA	
7. If yes, then attach a separate note giving details of the change	Attachment		

6 Table T6 – Biomass stock

6.1 FRA 2005 Categories and definitions

Category	Definition
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.
Below-ground biomass	All living biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood biomass	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.

6.2 National data

6.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand			1995	Secondary data source. Growing stock information is a secretariat estimate based on different (unspecified) information sources

6.2.2 Classification and definitions

The UNECE/FAO 2000 report distinguishes two categories of biomass: Above-stump biomass and Stump and root biomass. There is a small difference in the definitions of the biomass fractions as compared to FRA 2005 regarding the stump biomass. In UNECE/FAO 2000 the stump biomass is grouped together with the root biomass, while in FRA 2005 the above-ground portion of the stump belongs to Above-ground biomass.

6.2.3 Original data

No data on biomass is presented in the data source. The data presented in this table have been derived from the available information on carbon for different biomass categories (see chapter 7.2.3) and applying a default carbon content of 50 percent to derive the biomass figure. The original data will then be as follows:

Category	Tg biomass (Oven dry weight)
Above stump biomass	0.82
Stump and root biomass	0.20

Note that one teragram (Tg) is 1×10^{12} g and equals one million metric tonne. The above data only refer to forest. No information on biomass of dead wood has been found.

6.3 Analysis and processing of national data

6.3.1 Calibration

No calibration was needed.

6.3.2 Estimation and forecasting

No time series of data is available. Hence, the 1995 figures have been used for 2000 and 2005. The 1990 figures have been derived by calibrating the biomass stock figures with the total forest area for 1990.

6.4 Reclassification into FRA 2005 classes

”Above-stump biomass” is considered to correspond to “Above-ground biomass” and “Stump and root biomass” is considered to correspond to “Below-ground biomass”.

6.5 Data for National reporting table T6

FRA 2005 Categories	Biomass (million metric tonnes oven-dry weight)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Above-ground biomass	0.77	0.82	0.82	NDA	NDA	NDA
Below-ground biomass	0.19	0.20	0.20	NDA	NDA	NDA
Dead wood biomass	NDA	NDA	NDA	NDA	NDA	NDA
TOTAL	0.96	1.02	1.02			

7 Table T7 – Carbon stock

7.1 FRA 2005 Categories and definitions

Category	Definition
Carbon in above-ground biomass	Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.
Carbon in below-ground biomass	Carbon in all living 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.
Carbon in dead wood biomass	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.
Carbon in litter	Carbon in all non-living biomass with a diameter less than a minimum diameter chose by the country for lying dead (for example 10 cm), in various states of decomposition above the mineral or organic soil. This includes the litter, fomic, and humic layers.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a specified depth chosen by the country and applied consistently through the time series.

7.2 National data

7.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand			1995	Secondary data source. Growing stock information is a secretariat estimate based on different (unspecified) information sources

7.2.2 Classification and definitions

The UNECE/FAO 2000 report on two categories: Carbon in above-stump biomass and Carbon in stump and root biomass. There is a small difference in the definitions of the biomass fractions as compared to FRA 2005 regarding the stump biomass. In UNECE/FAO 2000 the stump biomass is grouped together with the root biomass, while in FRA 2005 the above-ground portion of the stump belongs to Above-ground biomass.

7.2.3 Original data

Category	Tg Carbon
Above stump biomass	0.41
Stump and root biomass	0.1

Note that one Teragram (Tg) is 1×10^{12} g and equals one million metric tonne.

7.3 Analysis and processing of national data

7.3.1 Calibration

No calibration was needed.

7.3.2 Estimation and forecasting

No time series of data is available. Hence, the 1995 figures have been used for 2000 and 2005. The 1990 figures have been derived by calibrating the carbon stock figures with the total forest area for 1990.

7.4 Reclassification into FRA 2005 classes

”Above-stump biomass” is considered to correspond to “Above-ground biomass” and “Stump and root biomass” is considered to correspond to “Below-ground biomass”.

7.5 Data for National reporting table T7

FRA 2005 Categories	Carbon (Million metric tonnes)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Carbon in above-ground biomass	0.39	0.41	0.41	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Carbon in below-ground biomass	0.09	0.10	0.10	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Sub-total: Carbon in living biomass	0.48	0.51	0.51	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Carbon in dead wood	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Carbon in litter	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Sub-total: Carbon in dead wood and litter	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
Soil carbon to a depth of _____ cm	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>
TOTAL CARBON	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>	<i>NDA</i>

8 Table T8 – Disturbances affecting health and vitality

8.1 FRA 2005 Categories and definitions

Category	Definition
Disturbance by fire	Disturbance caused by wildfire, independently whether it broke out inside or outside the forest/OWL.
Disturbance by insects	Disturbance caused by insect pests that are detrimental to tree health.
Disturbance by diseases	Disturbance caused by diseases attributable to pathogens, such as a bacteria, fungi, phytoplasma or virus.
Other disturbance	Disturbance caused by other factors than fire, insects or diseases.

8.2 National data

8.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand	M	Area burned	1995	Secondary data source.

8.2.2 Classification and definitions

National class	Definition
Forest Fire	Fire which breaks out and spreads on forest and other wooded land or which breaks out on other land and spreads to forest and other wooded land. <i>Excludes:</i> Prescribed or controlled burning, usually with the purpose of reducing or eliminating the quantity of accumulated fuel on the ground.

8.2.3 Original data

Source: UNECE/FAO, 2000.

Category	1990	1991	1992	1993	1994	1995	1996	1997
	1000 hectares							
Area of Forest burned	0	0	0	0	0	0	0	0
Area of Other wooded land burned	0	0	0	0	0	0	0	0
Total area burned	0	0	0	0	0	0	0	0

	Tot. area with damage by known cause	Primarily damaged by (1 000 hectares)					Tot. area with damage by unidentified
		Insects and disease	Wildlife and grazing	Fire	Known local pollution	Storm wind snow or other	

					sources	identifiable abiotic factors	causes
Total	0.7	0.1	0.4	0	0.3	0	0

8.3 Analysis and processing of national data

8.3.1 Estimation and forecasting

No time series of data is available, neither any other information that can constitute basis for a trend estimate. Hence, the 1995 figures have been used for all three reporting years.

8.4 Reclassification into FRA 2005 classes

No reclassification was needed.

8.5 Data for National reporting table T8

FRA-2005 Categories	Average annual area affected (1000 hectares)			
	Forests ¹		Other wooded land	
	1990	2000	1990	2000
Disturbance by fire	0	0		
Disturbance by insects ²	0.1	0.1		
Disturbance by diseases				
Other disturbance ³	0.6	0.6		

¹ No separate data for Forest and Other wooded land. Hence, presented data represents are of damage to Forest and Other wooded land.

² Includes: disturbance by diseases.

³ Includes: wildlife and grazing, known local pollution sources.

9 Table T9 – Diversity of tree species

9.1 FRA 2005 Categories and definitions

Category	Definition
Number of native tree species	The total number of native tree species that have been identified within the country.
Number of critically endangered tree species	The number of native tree species that are classified as “Critically endangered” in the IUCN red list.
Number of endangered tree species	The number of native tree species that are classified as “Endangered” in the IUCN red list.
Number of vulnerable tree species	The number of native tree species that are classified as “Vulnerable” in the IUCN red list.

9.2 National data

9.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
UNECE/FAO, 2000. Forest Resources of Europe, CIS, North America, Australia, Japan and New Zealand			1995	Secondary data source.
IUCN Red List of threatened species			2000	

9.2.2 Original data

UNECE/FAO reported number of tree species (total and forest-occurring) is 39.

The IUCN Red List of threatened species does not indicate any occurrence of vulnerable species.

9.3 Data for National reporting table T9

FRA 2005 Categories	Number of species (year 2000)
Native tree species	39
Critically endangered tree species	0
Endangered tree species	0
Vulnerable tree species	0

10 Table T10 – Growing stock composition

No information has been found to support estimates of the growing stock composition.

11 Table T11 – Wood removal

11.1 FRA 2005 Categories and definitions

Category	Definition
Industrial wood removal	The wood removed (volume of roundwood over bark) for production of goods and services other than energy production (woodfuel).
Woodfuel removal	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

11.2 National data

11.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FAOSTAT, 2004		Wood production		

11.2.2 Classification and definitions

FAOSTAT uses the same definition of the categories Industrial roundwood and Woodfuel as FRA 2005. It is assumed that the term “Production” used in FAOSTAT can be used as a good estimate of “Removal”, although these terms are not identical.

FRA 2005 requests information on wood removal as volume over bark while the FAOSTAT figures refer to volume under bark. The figures are converted from volume under bark to volume over bark by application of a bark factor. The bark factor used is the “global” default conversion factor of 1.15.

11.2.3 Original data

FAOSTAT provides the following data on wood production for the period 1997 – 2002:

Category	Volume m ³ under bark					
	1997	1998	1999	2000	2001	2002
Industrial roundwood	9 000	9 000	3 333	20 000	18 000	18 000
Woodfuel	4 000	4 000	4 167	4 167	4 167	4 167
Total	13 000	13 000	7 500	24 167	22 167	22 167

The average values (rounded to 1000) over bark for the period 1998 – 2002 (reporting year 2000) are:

Category	Volume m3 over bark
	Average 1998-2002
Industrial roundwood	16 000
Woodfuel	5 000
Total	21 000

There are no information on how the production is distributed between Forest and Other wooded land

11.3 Analysis and processing of national data

11.3.1 Estimation and forecasting

No estimation and forecasting have been done. The estimate for year 2000 has been used for all reporting years.

11.4 Reclassification into FRA 2005 classes

No reclassification was needed.

11.5 Data for National reporting table T11

FRA 2005 Categories	Volume in 1000 cubic meters of roundwood over bark					
	Forest ¹			Other wooded land		
	1990	2000	2005	1990	2000	2005
Industrial roundwood	16	16	16	NDA	NDA	NDA
Woodfuel	5	5	5	NDA	NDA	NDA
TOTAL for Country	21	21	21			

¹ Also includes the removals from Other wooded land

12 Table T12 – Value of wood removal

No information has been found to support estimates of the value of wood removal.

13 Table T13 – Non-wood forest product removal

No information has been found to support estimates on removal of non-wood forest products.

14 Table T14 – Value of non-wood forest product removal

No information has been found to support estimates of the value of non-wood forest products removal.

15 Table T15 – Employment in forestry

No information has been found to support estimates of employment in forestry activities.