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Organization of the
United Nations

Global Forest Resources Assessment 2020

Report

Hungary

Rome, 2020



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Introduction

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Introductory text

In the Hungarian statistics on forest area (area under forest management plans) “forest” includes many area actually not covered by stands but closely related to forest management, like roads, clearings, forest glades, nurseries etc. In the national statistics they are categorised to forest areas.

These areas do not have many attributes that international statistical queries require. In MCPFE 2007, seeing its definitions, we used a sophisticated method to proportionately calculate many attributes to the whole forest area, but on the long run it is not practical by consistency reasons.

In the FRA 2010, FRA 2015, as well as in the present submission we followed the traditional FRA methodology and omitted these re-calculations.

1 Forest extent, characteristics and changes

1a Extent of forest and other wooded land

National data

Data sources

1990	References	
	Methods used	Other (specify in comments)
	Additional comments	Stand inventory

2000	References	
	Methods used	Other (specify in comments)
	Additional comments	Stand inventory

2005	References	
	Methods used	Other (specify in comments)
	Additional comments	Stand inventory

2010	References	
	Methods used	Other (specify in comments)
	Additional comments	Stand inventory

2015	References	
	Methods used	Other (specify in comments)
	Additional comments	Stand inventory

Classifications and definitions

1990	National class	Definition
	Forest	
	Other Wooded Land	

2000	National class	Definition
	Forest	
	Other Wooded Land	

2005	National class	Definition
	Forest	
	Other Wooded Land	

2010	National class	Definition
	Forest	
	Other Wooded Land	

2015	National class	Definition
	Forest	
	Other Wooded Land	

Original data and reclassification

1990	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Forest	1 813.90	100.00 %	0.00 %	0.00 %
	Other Wooded Land	0.00	0.00 %	100.00 %	0.00 %
	Total	1 813.90	1 813.90	0.00	0.00

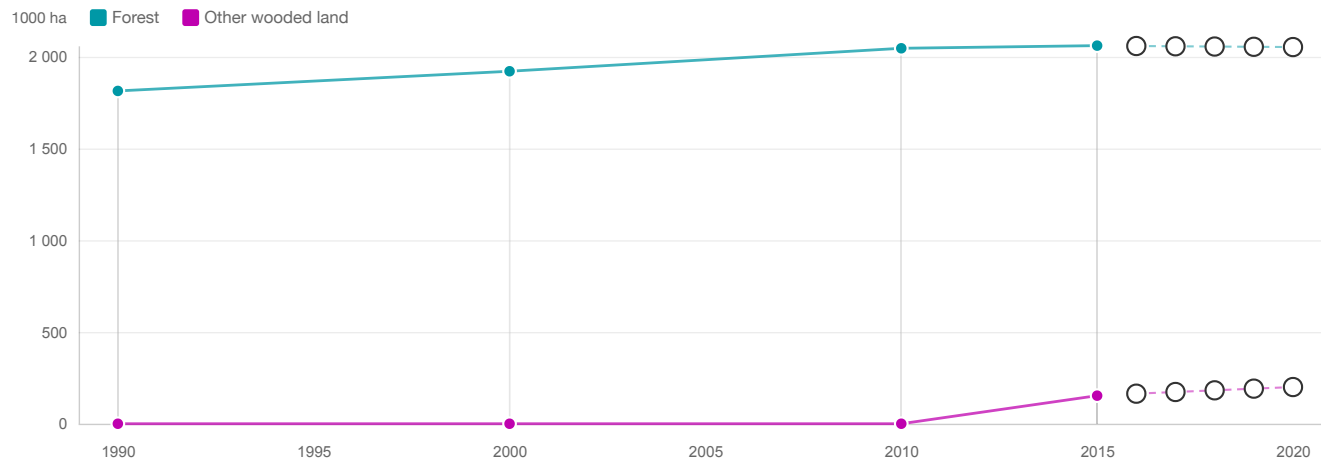
2000	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Forest	1 921.17	100.00 %	0.00 %	0.00 %
	Other Wooded Land	0.00	0.00 %	100.00 %	0.00 %
	Total	1 921.17	1 921.17	0.00	0.00

2005	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land

	Forest	1 983.90	100.00 %	0.00 %	0.00 %
	Other Wooded Land	0.00	0.00 %	100.00 %	0.00 %
	Total	1 983.90	1 983.90	0.00	0.00

2010	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Forest	2 046.39	100.00 %	0.00 %	0.00 %
	Other Wooded Land	0.00	0.00 %	100.00 %	0.00 %
	Total	2 046.39	2 046.39	0.00	0.00

2015	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Forest	Other wooded land	Other land
	Forest	2 060.82	100.00 %	0.00 %	0.00 %
	Other Wooded Land	153.00	0.00 %	100.00 %	0.00 %
	Total	2 213.82	2 060.82	153.00	0.00



FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	1 813.90	1 921.17	2 046.39	2 060.82	2 058.73	2 057.27	2 055.92	2 054.47	2 053.01
Other wooded land (a)	0.00	0.00	0.00	153.00	163.80	173.00	182.10	191.30	200.00
Other land (c-a-b)	7 239.10	7 131.83	7 006.61	6 839.18	6 830.47	6 822.73	6 814.98	6 807.23	6 799.99
Total land area (c)	9 053.00	9 053.00	9 053.00	9 053.00	9 053.00	9 053.00	9 053.00	9 053.00	9 053.00

The FAOSTAT land area figure for the year 2015 is used for all reference years

Climatic domain	% of forest area 2015	Override value
Boreal	0.00	
Temperate	100.00	
Sub-tropical	0.00	
Tropical	0.00	

Comments

Forest areas 1990, 2000 and 2005 were corrected (the last one was a forecasted area based on former afforestation rates; however, afforestation activities decreased) in order to harmonize these statistics with those of the Greenhouse Gas Inventory.

Forest is defined as land spanning more than 0.5 hectares with trees higher than five meters and a canopy cover of more than 30 percent, or trees able to reach these thresholds, in situ. It does not include land that is predominantly under agricultural or urban land use, but in addition to areas covered by trees, it includes roads and other areas that have no tree cover but are under forest management.

Other wooded land comprises land spanning more than 0.5 hectares:

- with trees higher than 5 meters and a canopy cover between 5-10 percent, or trees able to reach these thresholds in situ and
- with the combined canopy cover of trees and shrubs over 10%.

Forest area data come from the National Forest Database. OWL data are taken from the Hungarian National Forest Inventory.

1b Forest characteristics

National data

Data sources

1990	References	
	Methods used	Other (specify in comments)
	Additional comments	Stand inventory

2000	References	
	Methods used	Other (specify in comments)
	Additional comments	Stand inventory

2005	References	
	Methods used	Other (specify in comments)
	Additional comments	Stand inventory

2010	References	
	Methods used	Other (specify in comments)
	Additional comments	Stand inventory

2015	References	
	Methods used	Other (specify in comments)
	Additional comments	Stand inventory

Classifications and definitions

1990	National class	Definition
	Forest	
	Other Wooded Land	

2000	National class	Definition
	Forest	
	Other Wooded Land	

2005	National class	Definition
	Forest	
	Other Wooded Land	

2010	National class	Definition
	Forest	
	Other Wooded Land	

2015	National class	Definition
	Forest	
	Other Wooded Land	

Original data and reclassification

1990	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Naturally regenerating forest	Plantation forest	Other planted forest
	Forest	1 813.90	%	%	%
	Total	1 813.90	–	–	–

2000	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Naturally regenerating forest	Plantation forest	Other planted forest
	Forest	1 921.17	%	%	%
	Total	1 921.17	–	–	–

2005	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Naturally regenerating forest	Plantation forest	Other planted forest
	Forest	1 983.90	63.42 %	7.71 %	28.87 %
	Total	1 983.90	1 258.19	152.96	572.75

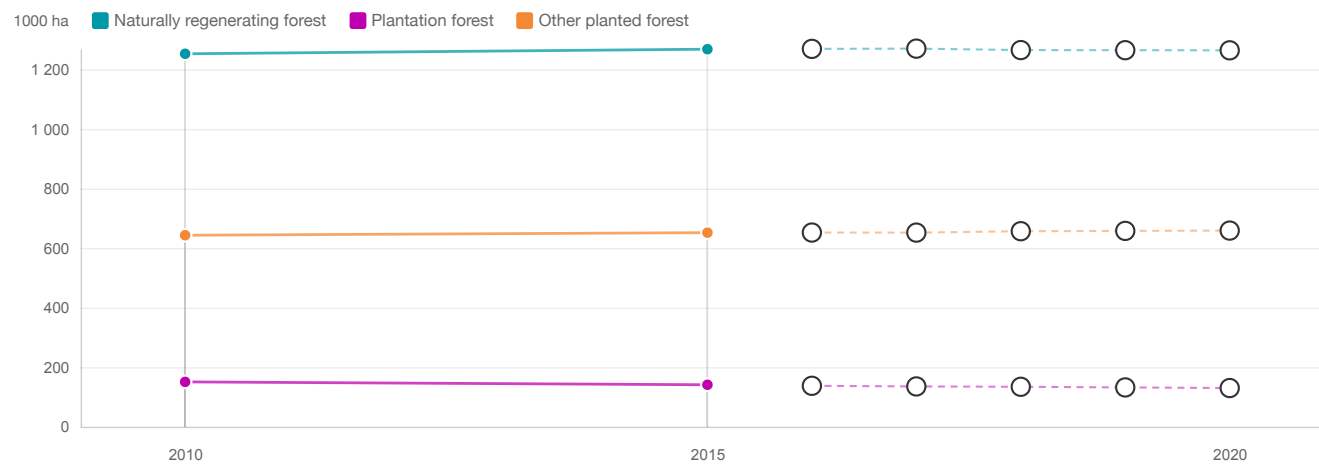
Plantation forest	Area (1000 ha)	...of which introduced
Forest	152.96	92.72 %
Total	152.96	141.82

2010	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Naturally regenerating forest	Plantation forest	Other planted forest
	Forest	2 046.39	61.21 %	7.36 %	31.43 %
	Total	2 046.39	1 252.60	150.61	643.18

Plantation forest	Area (1000 ha)	...of which introduced
Forest	150.61	92.33 %
Total	150.61	139.06

2015	Classifications and definitions		FRA classes		
	Class	Area (1000 ha)	Naturally regenerating forest	Plantation forest	Other planted forest
	Forest	2 060.82	61.53 %	6.84 %	31.63 %
	Total	2 060.82	1 268.02	140.96	651.84

Plantation forest	Area (1000 ha)	...of which introduced
Forest	140.96	91.89 %
Total	140.96	129.53



FRA categories	Forest area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest (a)			1 252.60	1 268.02	1 269.08	1 269.91	1 265.06	1 264.65	1 264.23
Planted forest (b)	–	–	793.79	792.80	789.66	787.36	790.86	789.82	788.78
Plantation forest			150.61	140.96	137.45	135.35	134.16	132.06	129.97
...of which introduced species			139.06	129.53	126.79	124.69	122.92	120.87	118.83
Other planted forest			643.18	651.84	652.21	652.01	656.70	657.76	658.81
Total (a+b)	–	–	2 046.39	2 060.82	2 058.74	2 057.27	2 055.92	2 054.47	2 053.01
Total forest area	1 813.90	1 921.17	2 046.39	2 060.82	2 058.73	2 057.27	2 055.92	2 054.47	2 053.01

Comments

Note that it was not possible to type numeric values directly. That is the reason for the small differences if comparing with the corresponding SOEF table (4.2a).

If regeneration type was not known directly, species composition and origin (seed/coppice) were used to distinguish naturally from artificially-regenerated stands. Coppices and all other stands for which artificial regeneration could not be proved were regarded as natural regeneration. Area of stands with unknown origin decreased from 567 to 455 thousand hectares between 2005 and 2017.

Planted forests comprise the following areas:

- 1.) area of known afforestations
- 2.) area of known artificial regeneration
- 3.) total area of hybrid poplar and hybrid willow stands
- 4.) total area of regular wide-spacing stands
- 5.) cutting area where regeneration process has not been started
- 6.) area of seed-originated black locust, willow, alder and coniferous stands.

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

National Forest Database

National classification and definitions

Temporarily unstocked and/or recently regenerated areas comprise those areas where:

1.) final cutting was carried out but the regeneration was not completed; a regeneration process can be regarded as completed if:

- species composition is within the limits as requested by the forest management plan
- an even distribution of trees over the entire area
- healthy tree individuals overall
- the number of trees with main shoots is more than a species-specific minimum value, usually between four and eight thousand trees per hectare
- no invasive tree species is widespread in the stand
- minimum height of the main species reaches 1 m (for sessile and pubescent oak) or 1.5 m

2.) afforestation was started but not completed; afforestation can be regarded as completed if:

- species composition is in accordance with the afforestation plan
- an even distribution of trees over the entire area
- healthy tree individuals overall
- the number of trees with main shoots reaches that prescribed in the afforestation plan
- minimum height of the main species reaches 1.5 m

Original data

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Analysis and processing of national data

Estimation and forecasting

Linear extrapolation was done from data of 2016 and 2017

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest	0.00	0.00	0.00	0.00	0.00
Temporarily unstocked and/or recently regenerated	206.08	167.40	186.88	214.60	194.33
Bamboos	0.00	0.00	0.00	0.00	0.00
Mangroves	0.00	0.00	0.00	0.00	0.00
Rubber wood	0.00	0.00	0.00	0.00	0.00

Comments

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

National Forest Database (which is a standwise database storing data obtained by forest planning and inspection)

National classification and definitions

Afforestation areas are areas where afforestation was carried out (started) in the given year.

Natural expansion was recorded during forest planning. Spatial comparisons of forest subcompartment polygons were also applied.

Original data

year	total forest	afforestation	natural expansion	deforestation
1990	1813902	6494	6586	613
1991	1825404	6334	6985	1817
1992	1838339	6739	7644	1447
1993	1846338	3045	5283	329
1994	1852141	2713	3308	218
1995	1861421	3946	5692	358
1996	1871746	6240	4701	617
1997	1883569	7854	4492	522
1998	1893962	7745	3050	402
1999	1907512	8219	6778	1447
2000	1921170	9242	5602	1187
2001	1936944	12402	4670	1297
2002	1955180	14001	6091	1856
2003	1967573	11342	2303	1252
2004	1975690	7150	2353	1387
2005	1983896	7228	1836	859
2006	1998887	13206	3112	1327
2007	2019194	17888	3772	1353
2008	2030830	7220	5567	1152
2009	2039347	3518	6489	1490
2010	2046394	6261	3138	2351
2011	2050662	1647	4224	1604
2012	2055632	1164	5520	1713

2013	2059453	697	4369	1246
2014	2061432	1422	2058	1501
2015	2060819	245	841	1699
2016	2058728	160	578	2829
2017	2057273	756	1664	3875

Analysis and processing of national data

Estimation and forecasting

For extrapolation average changes of 2016 and 2017 were used.

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)	11.56	13.95	4.44	1.58
...of which afforestation	6.21	10.02	1.03	0.46
...of which natural expansion	5.35	3.93	3.40	1.12
Deforestation (b)	0.83	1.43	1.55	3.14
Forest area net change (a-b)	10.73	12.52	2.89	-1.56

Comments

It is important to note that forest area decrease is not a real progress but merely the consequence of changes in the Hungarian forest law.

Due to changes in the Hungarian forest law in 2017 some areas which had been classified formerly as forest can be reclassified and considered as 'not forest' (or a special forest category where management is not planned by the state). Forest managers should apply for such a change.

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

National Forest Database

National classification and definitions

The statistics reflect the start of the regeneration process. After 2009 area of natural regeneration is underestimated due to changes in the forest law. Before, forest law defined those stand attributes (number of seedlings, species composition etc.) which were necessary for starting officially the natural regeneration process. Thus, an exact area number could be achieved since forest authority recorded all such areas. After 2009, in case of shelterwood and selective cuttings these areas were not recorded any more. An approximate estimate was done which based on harvesting areas of shelterwood cutting. However, this method underestimated real areas. Note that coppices cannot be classified according to origin: whether it had been planted formerly or not.

Original data

-

Analysis and processing of national data

Estimation and forecasting

Average reforestation rate of 2016 and 2017 was used for extrapolation

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Reforestation	10.55	9.98	8.78	9.06

Comments

Reforestation areas comprise only to the artificial regeneration following FRA 2020 definition. These areas have been corrected since the last submission (because of typing errors).

1f Other land with tree cover

National Data

Data sources + type of data source eg NFI, etc

Central Statistical Office

National classification and definitions

Statistics reflect area of orchards based on sampling data. Note that formerly orchard areas were estimated from land use statistics and not from estimated areas of orchards themselves which were assessed by sample-based studies. For 2010 no sample-based data are available.

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms (a)	0.00	0.00	0.00	0.00	0.00
Tree orchards (b)	59.97	78.82		81.37	82.24
Agroforestry (c)					
Trees in urban settings (d)					
Other (specify in comments) (e)					
Total (a+b+c+d+e)	59.97	78.82	0.00	81.37	82.24
Other land area	7 239.10	7 131.83	7 006.61	6 839.18	6 799.99

Comments

2 Forest growing stock, biomass and carbon

2a Growing stock

National Data

Data sources + type of data source eg NFI, etc

National Forest Database

National classification and definitions

If regeneration type was not known directly, species composition and origin (seed/coppice) were used to distinguish naturally from artificially-regenerated stands. Coppices and all other stands for which artificial regeneration could not be proved were regarded as natural regeneration. Growing stock of stands with unknown origin decreased from 134 to 127 million m³ between 2005 and 2017.

Planted forests comprise the following areas:

- 1.) area of known afforestations
- 2.) area of known artificial regeneration
- 3.) total area of hybrid poplar and hybrid willow stands
- 4.) total area of regular wide-spacing stands
- 5.) cutting area where regeneration process has not been started
- 6.) area of seed-originated black locust, willow, alder and coniferous stands

Original data

-

Analysis and processing of national data

Estimation and forecasting

Linear extrapolation

Reclassification into FRA 2020 categories

-

FRA categories	Growing stock m ³ /ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest			199.51	204.75	205.90	207.73	208.88	210.32	211.83
Planted forest			137.44	149.98	152.72	155.20	158.13	160.95	163.78
...of which plantation forest			114.86	128.41	134.59	138.16	142.89	147.21	151.73
...of which other planted forest			142.73	154.64	156.54	158.74	161.25	163.71	166.16
Forest	160.36	169.90	175.44	183.68	185.50	187.63	189.36	191.34	193.39
Other wooded land									

FRA categories	Total growing stock (million m ³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest			249.91	259.63	261.30	263.80	264.24	265.98	267.80
Planted forest			109.10	118.90	120.60	122.20	125.06	127.12	129.19
...of which plantation forest			17.30	18.10	18.50	18.70	19.17	19.44	19.72
...of which other planted forest			91.80	100.80	102.10	103.50	105.89	107.68	109.47
Forest	290.88	326.41	359.01	378.53	381.90	386.00	389.30	393.10	397.03
Other wooded land									

Comments

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

National Forest Database

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

Linear extrapolation

Reclassification into FRA 2020 categories

-

FRA categories	Scientific name	Common name	Growing stock in forest (million m ³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#1 Ranked in terms of volume	Quercus cerris	Turkey oak	38.53	42.51	45.21	47.15	48.88
#2 Ranked in terms of volume	Quercus petraea	Sessile oak	45.27	46.33	45.29	45.73	45.67
#3 Ranked in terms of volume	Fagus sylvatica	Beech	36.97	39.11	39.40	40.23	40.51
#4 Ranked in terms of volume	Pinus sylvestris	Scots pine	28.11	32.71	34.69	35.34	35.65
#5 Ranked in terms of volume	Quercus robur	Pedunculate oak	29.96	30.76	32.57	35.08	36.96
#6 Ranked in terms of volume	Carpinus betulus	Hornbeam	17.22	17.79	17.27	17.51	17.69
#7 Ranked in terms of volume	Populus x canescens	Grey poplar	3.37	5.55	8.53	10.90	13.07
#8 Ranked in terms of volume	Alnus glutinosa	Common alder	6.47	8.49	10.30	10.89	11.58
#9 Ranked in terms of volume	Fraxinus excelsior	Common ash	5.46	6.08	6.72	6.83	6.97
#10 Ranked in terms of volume	Picea abies	Norway spruce	4.13	5.09	5.65	5.16	5.04
Remaining native tree species			13.97	20.53	25.83	29.23	32.62
Total volume of native tree species			229.46	254.95	271.46	284.05	294.64
Introduced tree species							
#1 Ranked in terms of volume	Robinia pseudoacacia	Black locust	34.53	39.30	48.08	52.29	56.02
#2 Ranked in terms of volume	Populus x euramericana	Hybrid poplar	13.02	12.84	15.83	16.40	18.26
#3 Ranked in terms of volume	Pinus nigra	Black pine	8.61	11.04	11.90	11.91	12.02

FRA categories	Scientific name	Common name	Growing stock in forest (million m ³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#4 Ranked in terms of volume	Quercus rubra	Red oak	1.39	2.74	4.21	5.00	5.78
#5 Ranked in terms of volume	Fraxinus pennsylvanica	Green ash	1.07	1.34	1.52	1.71	1.78
Remaining introduced tree species			2.79	4.20	6.01	7.18	8.36
Total volume of introduced tree species			61.41	71.46	87.55	94.49	102.22
Total growing stock			290.87	326.41	359.01	378.54	396.86

Comments

A species was regarded as introduced if it does not occur naturally within the country borders. Note that formerly - due to the definition of SOEF 2015 - a different definition was applied: natural dispersion of a species was analyzed on a within-country scale.

Growing stock volumes have been slightly modified since the last submission in order to harmonize them with Greenhouse Gas Inventory.

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

Above- and below-ground biomasses were calculated from growing stock using methods applied in the Hungarian Greenhouse Gas (GHG) Inventory (NIR) available online at:

<https://unfccc.int/process/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/national-inventory-submissions-2018>

Deadwood data were taken from the Hungarian National Forest Inventory and processed by methods described in the Hungarian NIR.

National classification and definitions

Threshold values for deadwood sampling were:

Minimum height of standing deadwood reported (m):	1.3 m
Minimum diameter of standing deadwood reported (cm):	7
Is volume above ground (AG) or above stump (AS)?	AS
Minimum length of lying deadwood reported (m):	1
Minimum diameter of lying deadwood reported (cm):	10

From sampling data deadwood volume was modeled by tree stand type and age as described in the GHG Inventory

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	94.94	99.42	100.85	104.92	105.98	107.06	107.75	108.62	109.49
Below-ground biomass	23.74	24.85	25.21	26.23	26.49	26.76	26.94	27.15	27.37
Dead wood	5.59	6.04	6.38	6.70	6.77	6.84	6.90	6.96	7.03

Comments

2d Carbon stock

National Data

Data sources + type of data source eg NFI, etc

For carbon stock statistics the same applies as for biomass stock statistics while the former were calculated from the latter by methods detailed in the Hungarian NIR.

National classification and definitions

See at Table 2c

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

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FRA categories	Forest carbon (tonnes/ha)									
	1990	2000	2010	2015	2016	2017	2018	2019	2020	
Carbon in above-ground biomass	45.89	48.08	48.77	50.72	51.23	51.75	52.08	52.49	52.91	
Carbon in below-ground biomass	11.47	12.02	12.19	12.68	12.81	12.94	13.02	13.12	13.23	
Carbon in dead wood	2.69	2.91	3.08	3.23	3.27	3.30	3.33	3.36	3.39	
Carbon in litter										
Soil carbon										

Soil depth (cm) used for soil carbon estimates	
-------------------------------------------------------	--

Comments

3 Forest designation and management

3a Designated management objective

National Data

Data sources + type of data source eg NFI, etc

National Forest Database

National classification and definitions

Management objectives are declared in forest management plans:

FRA category	Management objective
Production	Production of wood, propagation material, fungi; game management, christmas tree plantation
Protection of soil and water	Soil, river bank, water quality protection; note that formerly bank protection was not put in this group
Conservation of biodiversity	Protected and strictly protected forests, gene reserves, forest reserves, Natura 2000 reserves
Social services	Forests nearby sanatoriums; sport, tourism, education, research; forests nearby monuments; wildlife parks, forest parks
Other	Forests protecting croplands, settlements, wildlife, landscape continuity and various traffic equipments (roads, railways etc.); military forests, forests along country borders

Contrary to the last submission, forest areas without forest cover (see the introductory text for explanation) were also classified into the given FRA categories:

FRA category	Forest areas without forest cover
Production	Christmas tree plantations, other tree plantations, seedling gardens, lanes, roads, buildings, railways, mines, areas for nourishing game, areas for storing harvested trees
Protection of soil and water	Area of artificial or natural lakes and watercourses
Conservation of biodiversity	Area of openings and bushy areas
Social services	Research stations, parks, ski pistes
Other	Unfertile areas

Original data

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Analysis and processing of national data

Estimation and forecasting

Linear extrapolation

Reclassification into FRA 2020 categories

Designated management objectives are prescribed in forest management plans. A forest may have a first, a second and a third management objective. In the first table only the first (primary) objectives were taken into account. In the second table, forests were classified according to all objectives.

Primary designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production (a)	1 442.37	1 248.00	1 260.78	1 248.61	1 226.12
Protection of soil and water (b)	170.30	142.63	175.60	183.34	190.51
Conservation of biodiversity (c)	76.88	388.75	468.59	491.40	506.97
Social Services (d)	47.58	32.60	21.86	20.76	19.47
Multiple use (e)					0.00
Other (specify in comments) (f)	75.93	109.16	119.57	116.70	109.93
None/unknown (g)	0.84	0.03	-0.01	0.01	0.01
Total forest area	1 813.90	1 921.17	2 046.39	2 060.82	2 053.01

Total area with designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production		1 478.32	1 328.11	1 327.70	1 325.10
Protection of soil and water		209.72	293.58	308.40	325.22
Conservation of biodiversity		393.25	507.70	680.42	828.35
Social Services		48.68	47.48	43.39	40.57
Other (specify in comments)					0.00

Comments

In 1990 each forest subcompartment had only one designated management objective. This is the reason for the empty cells in the Total area with designated management objective table.

After the establishment of Natura 2000 network (in 2008) designated management objectives were modified accordingly during the forest planning processes. This means that some forests received Natura 2000 management objective several years after 2008 (which each forest is planned every ten years).

3b Forest area within protected areas and forest area with long-term management plans

National Data

Data sources + type of data source eg NFI, etc

National Forest Database

National classification and definitions

Protected and strictly protected forests.

Original data

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Analysis and processing of national data

Estimation and forecasting

Linear extrapolation

Reclassification into FRA 2020 categories

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FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas	51.20	337.80	451.68	458.41	458.23	458.88	461.70	463.08	464.46
Forest area with long-term forest management plan	1 813.90	1 921.17	2 046.39	2 060.82	2 058.73	2 057.27	2 055.92	2 054.47	2 053.01
...of which in protected areas	51.20	337.80	451.68	458.41	458.23	458.88	461.70	463.08	464.46

Comments

Note that formerly Natura 2000 forests were classified as protected.

4 Forest ownership and management rights

4a Forest ownership

National Data

Data sources + type of data source eg NFI, etc

National Forest Database

National classification and definitions

Data have been corrected since the last submission. In the Hungarian Forest Database we have only three types of ownership: state, private and communal. The last involves municipal forests and forests of various communities (churches, foundations etc.). Formerly, all communal forests were classified as public forests. For the present submission, we divided communal forests according to forest managers (classification of which is much more sophisticated). Thus, communal forests managed by municipalities were assumed to be owned by a municipality.

Original data

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Analysis and processing of national data

Estimation and forecasting

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Reclassification into FRA 2020 categories

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FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Private ownership (a)	9.23	461.40	860.79	864.07
...of which owned by individuals				
...of which owned by private business entities and institutions				
...of which owned by local, tribal and indigenous communities				
Public ownership (b)	1 792.01	1 151.52	1 170.25	1 168.88
Unknown/other (specify in comments) (c)	12.66	308.25	15.35	27.87
Total forest area	1 813.90	1 921.17	2 046.39	2 060.82

Comments

4b Holder of management rights of public forests

National Data

Data sources + type of data source eg NFI, etc

National Forest Database

National classification and definitions

See at Table 4a

Original data

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Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

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FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Public Administration (a)		1 139.68	1 153.25	1 148.78
Individuals (b)		0.39	0.38	0.31
Private business entities and institutions (c)		1.26	5.63	4.27
Local, tribal and indigenous communities (d)		0.00	0.07	0.07
Unknown/other (specify in comments) (e)	1 792.01	10.19	10.92	15.45
Total public ownership	1 792.01	1 151.52	1 170.25	1 168.88

Comments

5 Forest disturbances

5a Disturbances

National Data

Data sources + type of data source eg NFI, etc

Forest Damage Database for 1990-2011

National Forest Damage Registry after 2011

National classification and definitions

FRA categories	Definition
Insects	Damages caused by insects
Diseases	Damages caused by fungi
Severe weather events	Abiotic damages except for fires
Other	Damages caused by wildlife and game, parasitic plants, tree decline; damages with unknown origins; human-induced damages

Original data

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Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

The statistics are calculated as: damaged area multiplied by proportion of damaged trees.

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Insects (a)	60.32	69.77	74.46	129.72	214.99	283.61	109.52	38.22	53.47	54.20	47.12	45.37	25.34	20.79	12.12	5.45	7.72	6.98
Diseases (b)	14.61	20.38	21.72	13.69	41.58	41.15	16.09	11.10	15.88	11.77	18.96	9.32	2.83	2.10	4.32	2.58	2.92	1.82
Severe weather events (c)	37.07	19.32	16.66	38.99	16.59	23.23	12.09	29.34	14.85	22.25	38.11	45.37	48.09	24.59	40.28	34.81	62.65	56.59
Other (specify in comments) (d)	26.06	24.75	26.01	40.51	32.27	35.09	39.91	60.11	37.04	29.80	25.80	24.19	20.25	21.10	17.72	16.99	14.37	18.11
Total (a+b+c+d)	138.06	134.22	138.85	222.91	305.43	383.08	177.61	138.77	121.24	118.02	129.99	124.25	96.51	68.58	74.44	59.83	87.66	83.50
Total forest area	1 921.17	–	–	–	–	1 983.90	–	–	–	–	2 046.39	–	–	–	–	2 060.82	2 058.73	2 057.27

Comments

5b Area affected by fire

National Data

Data sources + type of data source eg NFI, etc

Beginning 1999, the Fire Department started to provide data on the number and area of forest wildfires. In 2006, Hungary joined to the European Forest Fire Information System (EFFIS, <http://effis.jrc.it> or <http://www.jrc.ec.eu.int/>), and a new database was established in the Twinning Project No. HU 2004/016-689.01.02. Thus, beginning 2007, the Fire Department locates the fires, surveys the affected area, and, subsequently, the Forest Authority identifies the affected forest sub-compartments.

National classification and definitions

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Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total land area affected by fire	20.92	12.93	19.99	29.41	27.38	6.06	8.90	19.23	24.62	24.83	6.47	24.67	100.97	8.02	25.18	15.00	3.42	13.76
...of which on forest	0.81	0.42	0.38	1.05	0.35	3.53	0.63	2.06	0.40	0.85	0.24	1.19	4.37	0.41	0.76	1.60	0.22	1.24

Comments

Data have been carefully reviewed since the last submission.

5c Degraded forest

Does your country monitor area of degraded forest		No
If "yes"	What is the national definition of "Degraded forest"?	
	Describe the monitoring process and results	

Comments

We regard a forest as degraded if it does not utilize site conditions properly, for example due to species composition. However, we have no data on these forests.

6 Forest policy and legislation

6a Policies, Legislation and national platform for stakeholder participation in forest policy

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Indicate the existence of	Boolean (Yes/No)	
	National	Sub-national
Policies supporting SFM	Yes	No
Legislations and regulations supporting SFM	Yes	No
Platform that promotes or allows for stakeholder participation in forest policy development	Yes	No
Traceability system(s) for wood products	Yes	No

Comments

6b Area of permanent forest estate

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Forest area (1000 ha)					
	Applicable?	1990	2000	2010	2015	2020
Area of permanent forest estate	Yes	1 813.90	1 921.17	2 046.39	2 060.82	2 053.01

Comments

Area of permanent forest estate involves all areas where tree stand meets threshold size and crown cover values detailed in the Comments section of Table 1a.

7 Employment, education and NWFP

7a Employment in forestry and logging

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Full-time equivalents (1000 FTE)											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Employment in forestry and logging	24.29			18.33	2.96	15.37	16.04	2.47	13.56	23.13	4.15	18.98
...of which silviculture and other forestry activities							7.73	1.52	6.20	13.31	3.19	10.12
...of which logging							7.44	0.79	6.65	8.34	0.65	7.69
...of which gathering of non wood forest products												
...of which support services to forestry							0.78	0.09	0.69	1.42	0.30	1.12

Comments

7b Graduation of students in forest-related education

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Number of graduated students											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Doctoral degree							6.00	2.00	4.00	2.00	0.00	1.00
Master's degree	47.00	3.00	44.00	42.00	5.00	37.00	48.00	12.00	36.00	65.00	10.00	54.00
Bachelor's degree				52.00	5.00	46.00	110.00	32.00	78.00	80.00	24.00	56.00
Technician certificate / diploma							274.00	27.00	247.00	335.00	31.00	304.00
Total							437.00	72.00	365.00	482.00	66.00	416.00

Comments

7c Non wood forest products removals and value 2015

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#1						
#2						
#3						
#4						
#5						
#6						
#7						
#8						
#9						
#10						
All other plant products						
All other animal products						
Total					-	

Name of currency	
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Comments

8 Sustainable Development Goal 15

8a Sustainable Development Goal 15

SDG Indicator 15.1.1 Forest area as proportion of total land area 2015

Indicator	Percent							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area as proportion of total land area 2015	21.22	22.60	22.76	22.74	22.72	22.71	22.69	22.68

Name of agency responsible	
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SDG Indicator 15.2.1 Progress towards sustainable forest management

Sub-Indicator 1	Percent						
	2000-2010	2010-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Forest area annual net change rate	0.63	0.14	-0.10	-0.07	-0.07	-0.07	-0.07

Name of agency responsible	
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Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	99.42	100.85	104.92	105.98	107.06	107.75	108.62	109.49

Name of agency responsible	
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Sub-Indicator 3	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area located within legally established protected areas	16.39	21.92	22.24	22.24	22.27	22.40	22.47	22.54

Name of agency responsible	
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Sub-Indicator 4	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area under long-term forest management plan	93.22	99.30	100.00	99.90	99.83	99.76	99.69	99.62

Name of agency responsible	
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Sub-Indicator 5	Forest area (1000 ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area under independently verified forest management certification schemes	0.00	251.91	306.59	304.27	304.43	304.12	–	–