

● Wood products and timber trade

Wood products output in 2008<sup>1</sup>

	Removals	
	total (m³)	ratio in assortment composition (%)
Logs for panel products	140524	2.4
Sawlogs	1095723	18.4
Other raw material for sawmilling	504987	8.5
Pitwood	6657	0.1
Pulpwood	472505	7.9
Bolt for panels	359846	6.0
Other industrial wood	211326	3.5
Technological chips	30124	0.5
<b>Total industrial wood</b>	2821692	47.4
Fuelwood	3134848	52.6
<b>Total removals</b>	5956540	100.0

<sup>1</sup> National distribution calculated on the basis of a 66 % sample. Source: CAO

Output of selected products in 2008<sup>1</sup>

	Unit	Quantity
Coniferous sawnwood	1000 m³	88.8
Broadleaved sawnwood	"	118.3
Parquet frieze	"	19.7
Furniture strips and parts	"	4.0
Pallets	"	121.6
Wood particle board	"	605.9
<b>Laminated particle board</b>	"	514.1
Cement-bonded particle board	"	0.0
Fibreboard	"	119.6
Surface-treated fibreboard	"	70.1
Flat-pressed, moulded, laminated b.	"	19.1
Veneer sheets	million m²	37.4
Parquet	1000 m²	2345.0
Match	million boxes	188.0

<sup>1</sup> Based on data from large-scale and medium industries appointed for contributing data by the Ministry of Agriculture. Source: CAO

Timber trade in 2008

	Export	Import	Balance
	(million HUF)		
Solid wood products	15636	5624	10012
Sawn wood products	20843	33102	-12259
Panel products	45305	44236	1069
Miscellaneous wood products	53838	28206	25632
<b>Total wood products</b>	135622	111168	24454
Pulp and paper products	172712	274887	-102175
<b>Total</b>	308334	386055	-77721

Source: CAO

● Natural conservation

Protected forest lands

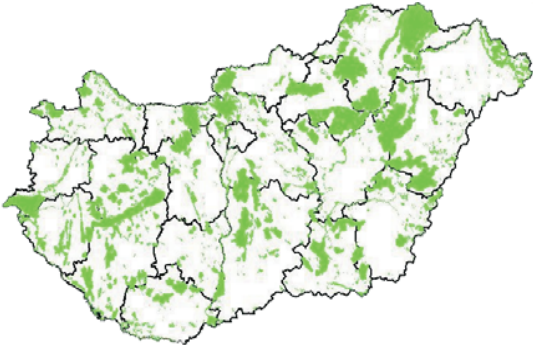
	Subcompartment	Other type of subcompartment	Total
	(ha)		
Strictly protected natural area	62598	4936	67534
Protected natural area	344290	23499	367789
Total protected forest land	406888	28435	435323

Source: CAO Database, Data as of Dec. 31, 2008.

47 % of the 836504 ha of protected lands of national importance (national parks, landscape protection areas and protected natural areas) are covered by forests.

The number of the forest reserves: 55 (Declaring forest reserve in progress: 8)

Natura 2000 Network



Source: State Secretariat for Nature and Environment Protection, Data as of Apr. 20, 2009.

● Organisational structure

Forest administration:

Ministry of Agriculture and Rural Development (MARD)
MARD - Department of Natural Resources
MARD Forestry Department
Central Agricultural Office Forest Directorate
County Agricultural Office (10) Forest Directorates
Forest management planning, official supervision of forest managements

Other organizations concerned with forestry:

- Central Agricultural Office, Directorate of Plant Production and Horticultural, Department of Forest Reproduction Materials
- Inspectorate of propagation materials
- Ministry of Environmental Protection and Water Management (KvVM), State Secretariat for Nature and Environment Protection, Department of Forestry and Landscape Protection
- Protection of the natural assets in forests on protected natural areas.

Forest research:

Forest Research Institute (ERTI), Budapest  
University of West Hungary (NyME), Sopron

Professional training:

Higher education: University of West Hungary, Sopron  
Professional secondary schools: Barcs, Mátrafüred, Sopron, Szeged  
Trade schools: Ásotthalom, Miskolc, Piliscsaba, Somogyzsitfa-Szöcsénypuszta

Executive publisher: László Lukács, President, Central Agricultural Office, www.mgszh.hu  
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FOREST RESOURCES,  
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Published by  
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## ● Forestation (regeneration and afforestation)

Achievements in the growing year 2007-2008

	State sector	Other forms of management	Total
	(ha)		
<b>Initial stand establishment</b>			
Natural regeneration by seed	2874	654	3528
Natural regeneration by sprouts	2047	3589	5636
Artificial regeneration	6044	4420	10464
Total regeneration	10965	8663	19628
Total afforestation	391	6941	7332
Total initial stand establishment	11356	15604	26960
Total blank filling	4116	3227	7342
Total initial s. e. and blank filling	15472	18831	34302
<b>Established plantations</b>			
Established regenerations	9755	7742	17497
Established afforestations	576	6472	7048
<b>Lead time (year)</b>			
Established regenerations	8.5	7.1	7.9
Established afforestations	5.6	4.7	4.7
<b>Felling site not yet regenerated</b>	1784	7942	9726
<b>Area with delayed regeneration</b>	453	5899	6352

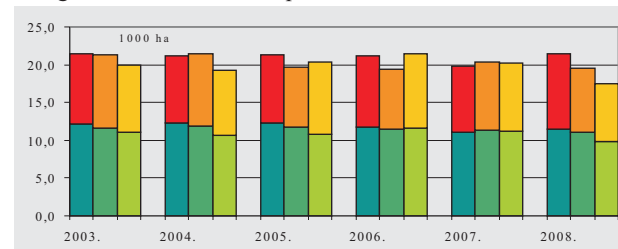
Forest regeneration includes compensatory planting.

Potential forest types in forestations (initial stand establishment)

	Regeneration	Afforestation	Total forestations
	(ha)		
Oak	3885	2918	6803
T. oak, other hard broadleaved	2127	366	2493
Beech	1184	0	1184
Black locust	6441	1940	8381
Hybrid poplar and white willow	2471	640	3111
Native poplar, other soft broadl.	2461	1457	3918
Coniferous	1059	11	1070
Total	19628	7332	26960

Source: CAO "Report on Forestation and Fellings in 2008"

Obligations and established plantations, 2003-2008



The three columns from left to right show the obligations, initial stands and established plantations respectively. The lower part of each column represents the state sector, the upper represents other forms of management.

Source: CAO "Report on Forestation and Fellings in 2008"

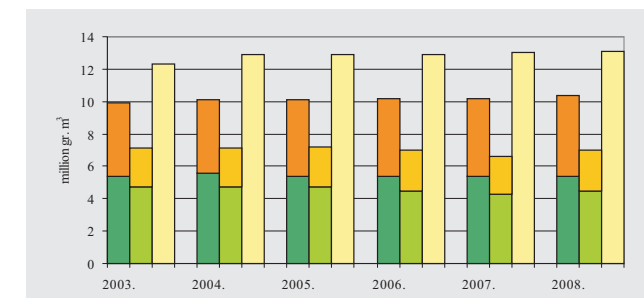
## ● Fellings

Gross fellings in 2008

	State sector	Other forms of management	Total
	(1000 gr. m <sup>3</sup> )		
<b>By type of felling</b>			
Final cutting	3063	1973	5036
Increment thinning	307	130	637
Selection thinning	408	262	670
Cleaning	169	94	263
Sanitary cutting	236	74	310
Other	74	34	108
Total	4457	2567	7024
<b>By area</b>			
	(ha)		
Reduced area of final cutting	11325	9870	21195
Area of increment thinning	12839	4314	17153
Area of selection thinning	16798	9729	26527
Cleaning area	16580	8318	24897
<b>By tree species groups</b>			
	(1000 gr. m <sup>3</sup> )		
Oak	915	250	1165
Turkey oak	749	181	930
Beech	599	93	692
Hornbeam	230	92	322
Black locust	472	955	1427
Other hard broadleaved	151	49	200
Hybrid poplar	421	501	922
Native poplar	100	83	183
Other soft broadleaved	171	133	304
Coniferous	649	230	879
Total	4457	2567	7024

Source: CAO "Report on Forestation and Fellings in 2008"

Total fellings and current annual increment, 2003-2008



The three columns from left to right show exploitable stock as planned in management plans, actual fellings and current annual increment respectively. The lower part of each column represents the state sector, the upper represents other forms of management.

Source: CAO Database and "Report on Forestation and Fellings in 2008"

Exploitable stock is determined by **ten-year management plans** based on the requirements of sustainable forest management and prepared by the state. Fellings are authorized and executions are recorded yearly by forest authorities.



● Notable milestones in the history of modern Hungarian forestry

1791	The Parliament enacted the first feudal forest act.
1879	Enactment of the first modern civil forest act.
1920	As a result of the peace-treaty closing the First World War, Hungary lost 84 % of its forests, and forest cover decreased from 26 % to 12 %.
1935	The IV Act of 1935 was not just a forest act adjusted to the new geographical conditions of the country, but also the first Hungarian law on nature conservation to be promulgated.
1936	Hungary hosted the second World Forestry Congress and the 9th Congress of IUFRO.
1945	Private forest holdings exceeding 58 hectares were nationalized, properties of 6 to 58 hectares were taken into state management.
1959-60	Forest joint tenures were cut back, about 30 % of the forests were assigned to agricultural cooperatives.
1961	Enactment of the Act VII of 1961 on forests and wildlife management based on the socialist ownership structure.
1996	As a result of the change of system, about 40 % of forests were privatised. The legislative control for multiple-use and sustainable forestry is provided in Act LIV of 1996 on forests and protection of forests.
2009	In the last decade the role of forests has been appreciated. So in accordance with the new requirements the Parliament has created the Act XXXVII of 2009 about forest, protection of forest and forest management.

● Main objectives of current Hungarian forest policy

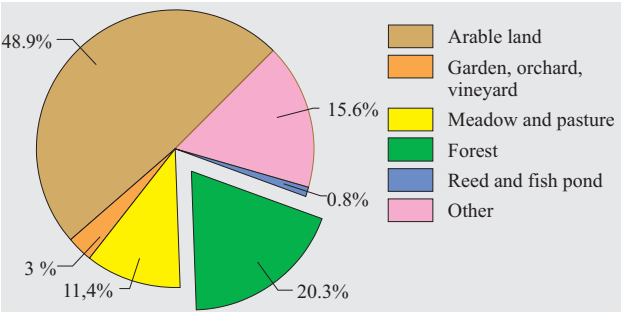
- To ensure long term environmental, economic and social services of forests with sustainable multiple-use forest management.
- To harmonize the interest of the society in sustaniable forest management with the interests of owners and managements.
- To maintain natural or close-to-natural forest stands composed by indigenous tree species and extend their area in accordance with prevailing site conditions.
- To increase the forested lands with afforestation up to the forest ratio of approximately 26-27 %.

● Comprehensive facts

Forest land area	1000 ha	1903.4
Forest ratio	%	20.4
Forest area per 1,000 inhabitants	ha/1000 cap.	189.5
Area of land in forestry use	1000 ha	2030.8
Growing stock	million gr. m³	351.9
Gross annual increment	million m³/year	13.1
Total fellings	million gr. m³	7.0
Final cutting	million gr. m³	5.0
Regeneration (initial planting) per year	1000 ha	20.4
Afforestation (initial planting) per year	1000 ha	7.3
Ratio of forests under management plans	%	100.0

Sources: Hungarian Central Statistical Office (KSH) 2009  
CAO Database, Data as of Dec. 31, 2008  
CAO "Report on Forestation and Fellings in 2008"

● Area by categories of land use



Source: County Land Offices, Data as of Jun. 31, 2009.

● Forest area according to the National Forestry Database

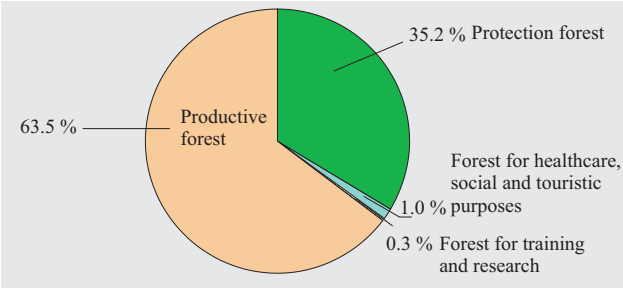
as of Dec. 31, 2008.	(1000 ha)	ratio (%)
Forest area (covered by tree stands or earmarked for plantation)	1903.4	20.4
Other wooded lands (nurseries, rides, permanent clearings)	127.4	1.4
Total area of land in forestry use	2030.8	21.8

● Forest land area and ownership categories in the counties

County	Area (km²)	Forest l. area (km²)	Forest ratio (%)	In forestry use (km²)	State (%)	Com-munal (%)	Private (%)	Un-known (%)
Pest and Budapest	6918	1686	24.4	1792	60.3	1.6	37.7	0.4
Central Hungary	6918	1686	24.4	1792	60.3	1.6	37.7	0.4
Fejér	4359	543	12.5	614	73.4	2.3	23.5	0.7
Komárom-Esztergom	2265	614	27.1	659	81.1	0.8	18.0	0.0
Veszprém	4493	1335	29.7	1538	63.6	0.5	35.4	0.5
Central Transdanubia	11117	2492	22.4	2811	70.1	0.9	29.0	0.1
Győr-Moson-Sopron	4208	813	19.3	903	69.3	0.4	30.2	0.1
Vas	3336	937	28.1	986	50.3	0.4	49.3	0.0
Zala	3784	1169	30.9	1241	53.1	0.5	44.6	1.8
Western Transdanubia	11328	2919	25.8	3131	56.9	0.4	42.1	0.6
Baranya	4430	1109	25.0	1162	53.9	1.2	44.4	0.5
Somogy	6036	1761	29.2	1884	55.8	1.0	42.1	1.1
Tolna	3703	657	17.8	704	56.2	0.7	42.9	0.2
Southern Transdanubia	14169	3528	24.9	3750	55.5	0.9	43.3	0.3
Borsod-Abaúj-Z.	7247	2050	28.3	2143	60.6	1.1	37.5	0.8
Heves	3637	872	24.0	905	60.0	0.4	39.6	0.0
Nógrád	2546	977	38.4	1014	56.0	0.2	43.6	0.2
Northern Hungary	13430	3898	29.0	4063	59.5	0.7	39.4	0.4
Hajdú-Bihar	6211	672	10.8	713	45.9	0.8	52.8	0.5
Jász-Nagykun-Szolnok	5582	323	5.8	349	43.5	6.4	49.4	0.8
Szabolcs-Szatmár-B.	5936	1188	20.0	1226	27.3	1.2	71.4	0.2
Northern Great Plain	17729	2182	12.3	2288	35.6	2.1	62.0	0.3
Bács-Kiskun	8445	1703	20.2	1806	46.8	0.7	52.4	0.2
Békés	5631	251	4.5	274	60.5	3.8	33.7	2.0
Csongrád	4263	374	8.8	394	48.5	1.2	50.1	0.1
Southern Great Plain	18339	2328	12.7	2474	48.9	1.1	49.7	0.3
Total	93030	19034	20.5	20308	55.6	1.0	42.9	0.5

Source: CAO Database, Data as of Dec. 31, 2008  
The category "unknown" covers areas belonging to new forest owners not yet registered as forest managers, who became owners during the system change. Before the transition the ratio of private forest was below 1 %.

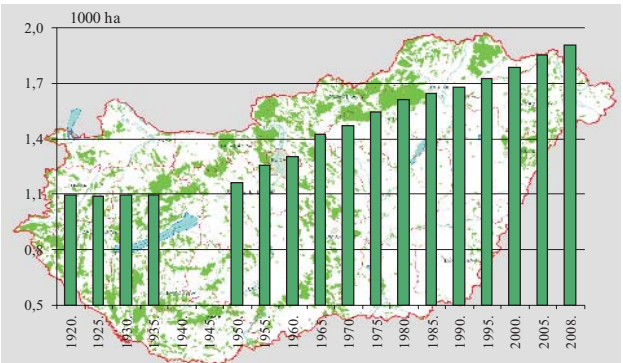
● Distribution of forests by primary function



Source: CAO "Report on Forestation and Fellings in 2008"

Protection forests include protective forests (soil, wildlife, water, settlement protection, etc.) and protected forests (e.g. in protected natural areas). Their area and ratio has been increasing for decades.

● Changes in forest area 1920-2008



Source: CAO Database  
Data for 1940 and 1945 is missing.

The forest ratio increased from 11.8 % to 20.4 % between 1920 and 2008 because of the subsidised afforestation program.

Afforestations in the past decade (initial plantings)

Growing year	State sector	Other forms of management	Total
	(ha)		
1999-2000	372	9418	9790
2000-2001	665	12472	13137
2001-2002	755	14075	14830
2002-2003	899	11116	12015
2003-2004	437	7137	7574
2004-2005	628	7029	7657
2005-2006	770	13219	13989
2006-2007	552	18436	18948
2007-2008	391	6941	7332

Source: CAO "Report on Forestation and Fellings in 2008"

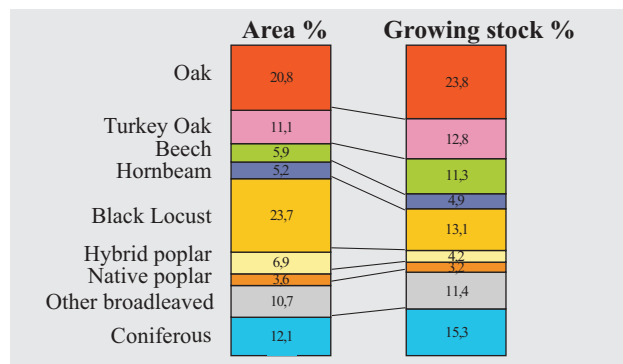
## ● Nature-oriented forestry

Year	Transition system <sup>1</sup>	Selection system <sup>2</sup>	Non-wood-productive forest l.
	(ha)		
2005	0	2901	36598
2006	4024	4956	44034
2007	8780	7220	47546
2008	13040	9219	51762

Source: CAO Database, 2008;

<sup>1</sup>The destination is the achievement of the selection system. <sup>2</sup>Individual trees or groups are harvested periodically and frequently.

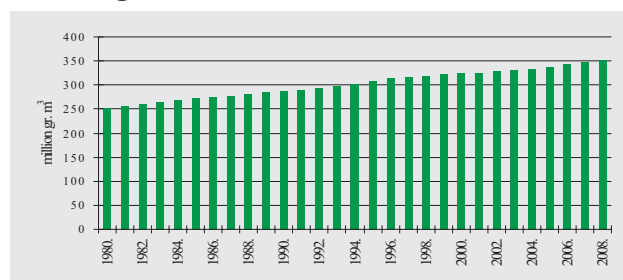
## ● Tree species distribution



Source: CAO Database, Data as of Dec. 31, 2008.

57 % of the forest area is covered by indigenous species, and 43 % by either introduced (black poplar, red oak, coniferous) or cloned (hybrid poplar) tree species.

## ● Growing stock 1980-2008

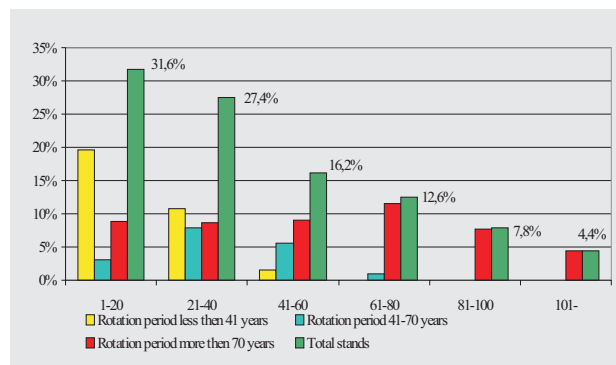


## ● Forest ratio in neighbour countries

	Forest ratio (%)	Forest area (1000 ha)
Slovenia	62,8	1264
Austria	46,7	3862
Slovakia	40,1	1929
Croatia	38,2	2135
Romania	27,7	6370
Serbia	26,4	2694
Ukraine	16,5	9575
Hungary	21,5	1976

Source: FAO, FRA 2005.

## ● Age class distribution by area

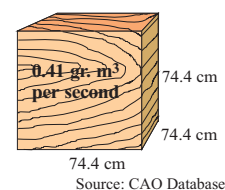


Source: CAO Database, Data as of Dec. 31, 2008.

## ● Current annual increment and growing stock

Current increment by species (%)	
Oak	20.4
Turkey oak	8.1
Beech	6.8
Black locust	24.5
Other hard broadleaved	8.5
Poplar	13.0
Other soft broadleaved	6.0
Coniferous	12.9

Gross annual increment in Hungarian forests:  
13.1 million m<sup>3</sup> / year

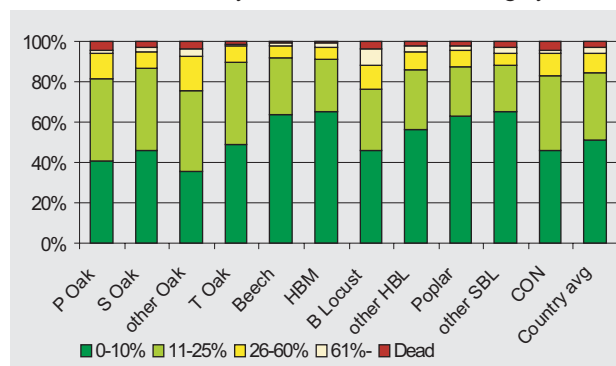


Source: CAO Database

Development of growing stock (million m <sup>3</sup> )			
Jan. 1, 2004	334.3	Dec. 31, 2006	344.1
Jan. 1, 2005	337.0	Dec. 31, 2007	347.4
Jan. 1, 2006	341.4	Dec. 31, 2008	351.9

## ● Health conditions in 2008

Defoliation measured by the ICP Forests Monitoring System

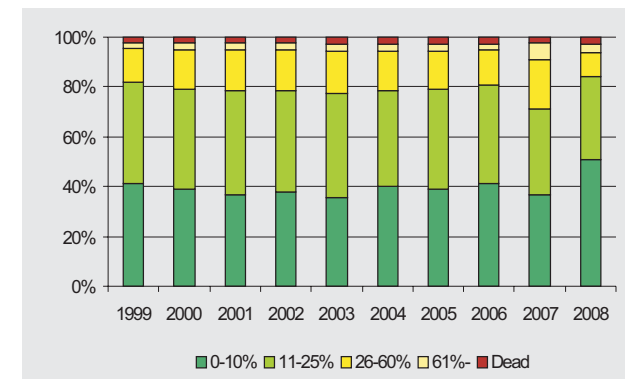


Source: CAO Health Conditions Database, 2008.

Health conditions changed a little in 2008. The number of not, slightly and severely damaged sample trees has increased while the number of medium damaged sample trees has decreased.

## ● Changes in Health conditions

Defoliation measured by the ICP Forests Monitoring System



Source: CAO Health Conditions Database

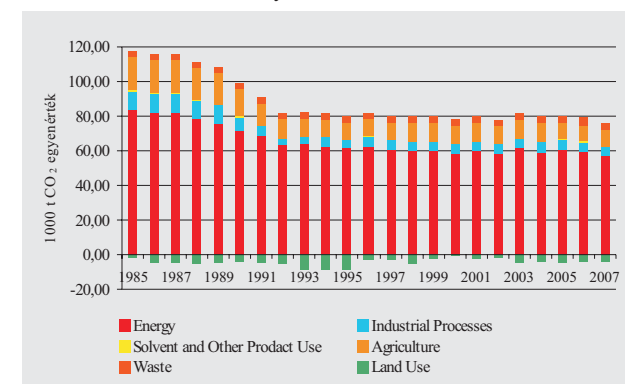
## ● Damages in forestations caused by game

Growing year	Quantitative damage (ha)	Qualitative damage (ha)
2001-2002	475	5944
2002-2003	427	6470
2003-2004	610	5565
2004-2005	282	5871
2005-2006	216	4440
2006-2007	296	4032
2007-2008	208	3622

Source: Cao, technical acceptance protocols of forestations

## ● Greenhouse gases

Emissions and removals by sectors



Source: OMSz, National Inventory Report (NIR 2008)

Land Use sector includes forestry, cropland and grazing land management and reforestations.

The Kyoto Protocol keeps count of five carbon pools in forests: above- and below-ground biomass, dead wood, litter and soil.

(The data of previous years were changed because of recalculation.)