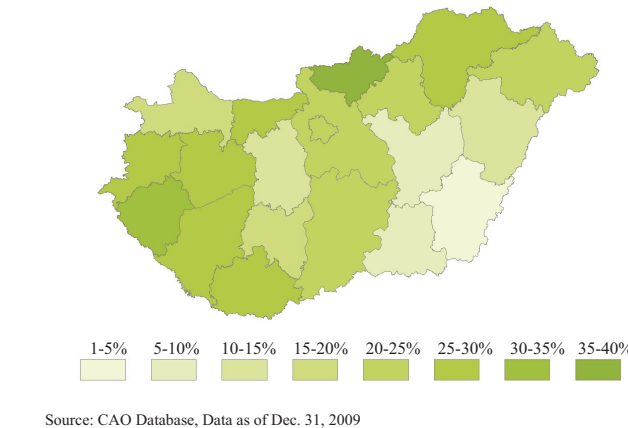
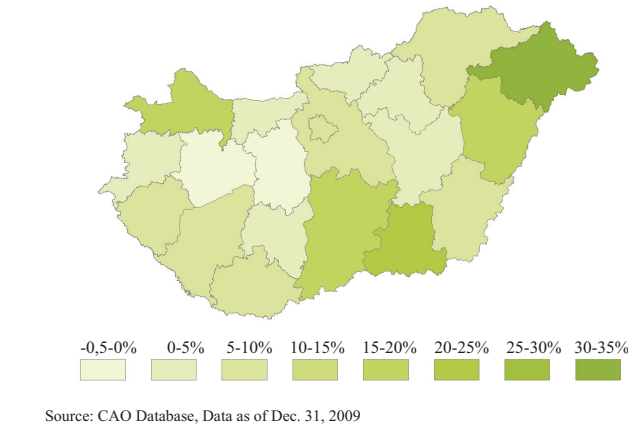


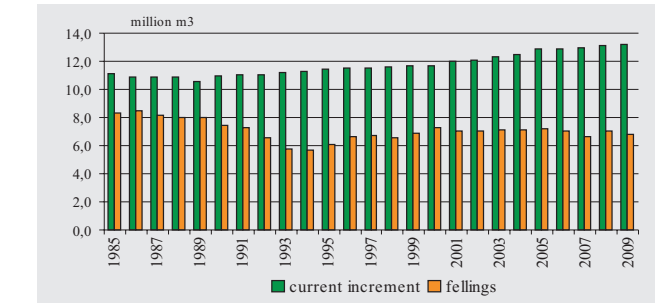
● **Forestation (regeneration and afforestation)**



● **Changes in forest ratio 2000-2009**



**The current annual increment and the fellinns 1985-2009**



Source: CAO Database

● **Forestation (regeneration and afforestation)**

Achievements in the growing year 2008-2009

	State sector	Other forms of management	Total
	(ha)		
Initial stand establishment			
Natural regeneration by seed	2984	822	3806
Natural regeneration by sprouts	2027	4384	6412
Artificial regeneration	5175	4710	9884
Total regeneration	10186	9016	19202
Total afforestation	793	4375	5168
Total initial stand establishment	10979	13391	24370
Total blank filling	2974	1806	4780
Total initial s. e. and blank filling	13953	15198	29150
Established plantations			
Established regenerations	10828	9144	19972
Established afforestations	593	8769	9362
Lead time (year)			
Established regenerations	8.7	7.0	7.9
Established afforestations	5.3	5.1	5.2
Felling site not yet regenerated	2186	8249	10435
Area with delayed regeneration	771	7114	7885

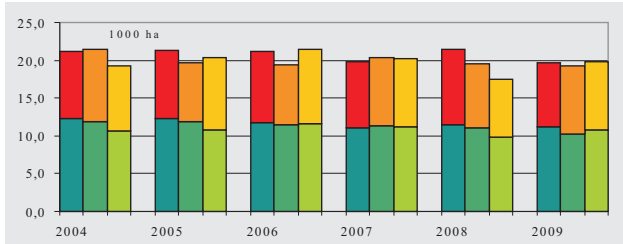
Forest regeneration includes compensatory planting.

Potential forest types in forestations (initial stand establishment)

	Regeneration	Afforestation	Total forestations
	(ha)		
Oak	3502	1452	4654
T. oak, other hard broadleaved	2435	328	2763
Beech	1225	0	1225
Black locust	7053	1466	8519
Hybid poplar and white willow	2032	563	2596
Native poplar, other soft broadl.	2164	1349	3514
Coniferous	791	9	800
Total	19202	5168	24370

Source: CAO "Report on Forestation and Fellings in 2009"

Obligations and established plantations, 2004-2009



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 2009"

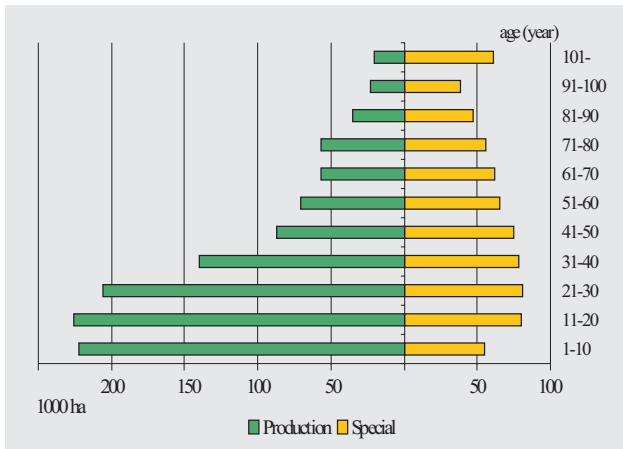
● **Fellings**

Gross fellings in 2009

	State sector	Other forms of management	Total
By type of felling	(1000 gr. m <sup>3</sup> )		
Final cutting	3026	1693	4719
Increment thinning	578	135	713
Selection thinning	408	239	647
Cleaning	167	99	266
Sanitary cutting	241	76	317
Other	82	29	111
Total	4502	2271	6774
By area	(ha)		
Reduced area of final cutting	11185	8471	19656
Area of increment thinning	14657	4505	19162
Area of selection thinning	17363	9275	26639
Cleaning area	16312	8942	25253
By tree species groups	(1000 gr. m <sup>3</sup> )		
Oak	858	194	1051
Turkey oak	769	168	936
Beech	648	97	745
Hornbeam	248	76	324
Black locust	492	988	1480
Other hard broadleaved	153	55	208
Hybrid poplar	371	329	699
Native poplar	109	55	164
Other soft broadleaved	169	112	281
Coniferous	686	199	885
Total	4502	2271	6774

Source: CAO "Report on Forestation and Fellings in 2009"

Age class distribution by area of wood production forests and forests with special function 2009



Source: CAO Database, Data as of Dec. 31, 2009

● **Wood products and timber trade**

Wood products output in 2009<sup>1</sup>

	Removals	
	total (m <sup>3</sup> )	ratio in assortment composition (%)
Logs for panel products	104271	1.8
Sawlogs	874408	14.8
Other raw material for sawmilling	326091	5.5
Pitwood	13183	0.2
Pulpwood	485470	8.2
Bolt for panels	367608	6.2
Other industrial wood	176470	3.0
Technological chips	17231	0.3
<b>Total industrial wood</b>	2364732	40.1
Fuelwood	3525502	59.9
Total removals	5890234	100.0

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

Output of selected products in 2009<sup>1</sup>

	Unit	Quantity
Coniferous sawnwood	1000 m <sup>3</sup>	87.8
Broadleaved sawnwood	"	87.5
Parquet frieze	"	13.0
Furniture strips and parts	"	2.7
Pallets	"	58.8
Wood particle board	"	112.8
Laminated particle board	"	126.3
Cement-bonded particle board	"	0.0
Fibreboard	"	112.5
Surface-treated fibreboard	"	66.2
Flat-pressed, moulded, laminated b.	"	16.6
Veneer sheets	million m <sup>2</sup>	26.8
Parquet	1000 m <sup>2</sup>	1331.2
Match	million boxes	261.0

<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 2009

	Export	Import	Balance
	(million HUF)		
Solid wood products	13626	4145	94781
Sawn wood products	17423	25273	-7850
Panel products	34993	37096	-2104
Miscellaneous wood products	44003	21722	22281
<b>Total wood products</b>	110045	88236	21809
Pulp and paper products	200587	253861	-53274
<b>Total</b>	310632	342097	-31465

Source: CAO

● **Natural conservation**

Protected forest lands

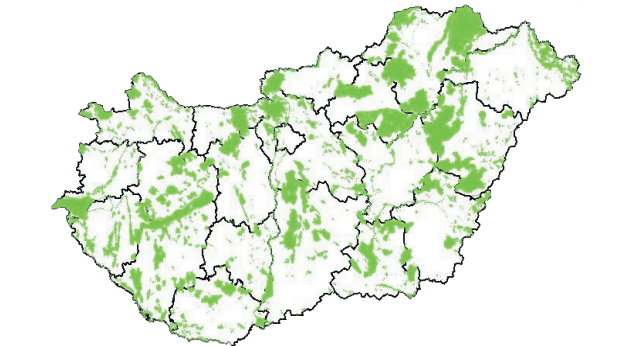
	Subcompartment	Other type of subcompartment	Total
	(ha)		
Strictly protected natural area	63486	5235	68721
Protected natural area	353754	23926	377680
Total protected forest land	417240	29161	446401

Source: CAO Database, Data as of Dec. 31, 2009

53 % of the 846537 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 protected area



Source: MRD Data as of Apr. 20, 2009.

● **Organisational structure**

Forest administration:

Ministry of Rural Development (MRD)	Other organizations concerned with forestry: - Central Agricultural Office, Directorate of Plant Production and Horticultural, Department of Forest and Energy Reproduction Materials - Ministry of Rural Development (MRD) Department of Natioanl Park and Landscape Protection Protection of the natural assets in forests on protected natural areas.
MRD - Department of Forestry, Fishing and Hunting	
MRD	
Forestry Department	
Central Agricultural Office Forest Directorate	Forest management planning, official supervision of forest managements
County Agricultural Office (10) Forest Directorates	
Forest management planning, official supervision of forest managements	

Forest research:

Forest Research Institute (ERTI), Sárvár  
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  
Compiled by: Károly Wisnovszky, Director, MgSzh Centre Forest Directorate, www.aesz.hu  
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FOREST RESOURCES, FORESTRY AND WOOD  
MANAGEMENT IN HUNGARY



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● **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	The UN and the EU has set a goal of paramount importance in the joint implementation of sustainable forest management. In order to achieve the goal the Parliament created the Act XXXVII of 2009 about forest, protection of forest and forest management.

● **Main objectives of current Hungarian forest policy**

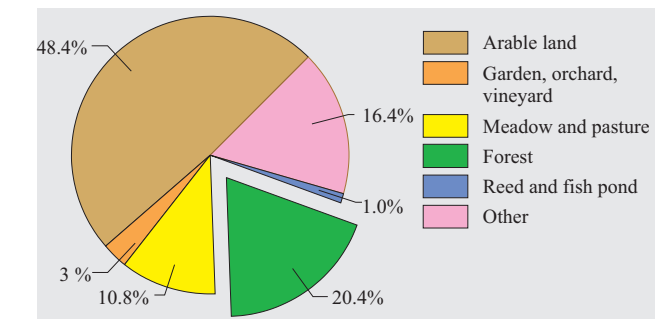
- To ensure long term environmental, economic and social services of forests with sustainable multiple-use forest management.
- To harmonize the interest of the society in sustainable forest management with the interests of owners and managements.
- To maintain natural or close-to-natural forest stands 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	1912.9
Forest ratio	%	20.6
Forest area per 1,000 inhabitants	ha/1000 cap.	191
Area of land in forestry use	1000 ha	2039.3
Growing stock	million gr. m <sup>3</sup>	355.8
Gross annual increment	million m <sup>3</sup> /year	13.2
Total fellings	million gr. m <sup>3</sup>	6.8
Final cutting	million gr. m <sup>3</sup>	4.7
Regeneration (initial planting) per year	1000 ha	19.2
Afforestation (initial planting) per year	1000 ha	5.2
Ratio of forests under management plans	%	100.0

Sources: Hungarian Central Statistical Office (KSH) 2010  
CAO Database, Data as of Dec. 31, 2009  
CAO “Report on Forestation and Fellings in 2009”

● **Area by categories of land use**



Source: KSH, Data as of Feb. 18, 2010

● **Forest area according to the National Forestry Database**

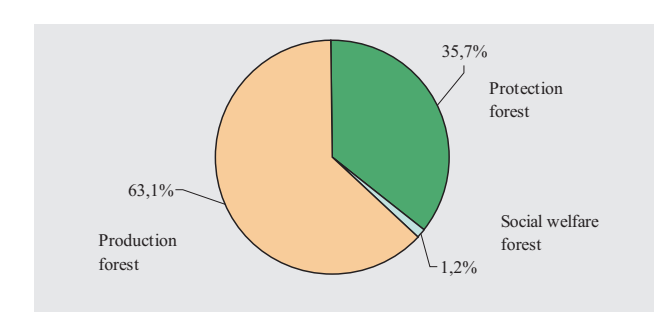
as of Dec. 31, 2009	(1000 ha)	ratio (%)
Forest area (covered by tree stands or earmarked for plantation)	1912.9	20.6
Other wooded lands (nurseries, rides, permanent clearings)	126.4	1.4
Total area of land in forestry use	2039.3	21.9

● **Forest land area and ownership categories in the counties**

County	Area (km <sup>2</sup> )	Forest l. area (km <sup>2</sup> )	Forest ratio (%)	In forestry use (km <sup>2</sup> )	State (%)	Com-munal (%)	Private (%)	Mixed (%)
Pest and Budapest	6918	1689	24.4	1790	60.5	1.6	37.5	0.4
Central Hungary	6918	1689	24.4	1790	60.5	1.6	37.5	0.4
Fejér	4359	544	12.5	614	73.7	2.2	23.5	0.6
Komárom-Esztergom	2265	613	27.1	659	81.1	0.9	18.0	0.0
Veszprém	4493	1341	29.8	1541	63.4	0.5	35.5	0.5
Central Transdanubia	11117	2498	22.5	2814	70.0	1.0	28.6	0.5
Győr-Moson-Sopron	4208	813	19.3	903	69.3	0.4	30.2	0.1
Vas	3336	939	28.1	987	50.6	0.4	49.1	0.0
Zala	3784	1176	31.1	1248	52.8	0.5	44.1	2.5
Western Transdanubia	11328	2928	25.8	3138	56.7	0.4	41.8	1.0
Baranya	4430	1111	25.1	1164	53.9	1.3	44.1	0.8
Somogy	6036	1770	29.3	1893	55.7	0.9	42.2	1.1
Tolna	3703	660	17.8	708	56.2	0.8	42.4	0.6
Southern Transdanubia	14169	3541	25.0	3765	55.2	1.0	42.8	0.9
Borsod-Abaúj-Z.	7247	2054	28.3	2145	60.5	1.1	37.6	0.9
Heves	3637	875	24.0	907	60.0	0.4	39.2	0.4
Nógrád	2546	982	38.6	1021	55.8	0.2	43.9	0.2
Northern Hungary	13430	3911	29.1	4073	59.2	0.7	39.5	0.6
Hajdú-Bihar	6211	677	10.9	718	45.7	0.8	52.9	0.5
Jász-Nagykun-Szolnok	5582	324	5.8	350	43.7	6.2	49.4	0.7
Szabolcs-Szatmár-B.	5936	1208	20.4	1247	27.1	1.2	71.6	0.2
Northern Great Plain	17729	2210	12.5	2316	35.2	1.8	62.6	0.4
Bács-Kiskun	8445	1721	20.4	1823	46.7	0.6	52.4	0.2
Békés	5631	252	4.5	275	60.2	3.9	34.0	1.9
Csongrád	4263	379	8.9	399	47.9	1.2	50.7	0.1
Southern Great Plain	18339	2352	12.8	2498	48.4	1.1	50.1	0.4
<b>Total</b>	<b>93030</b>	<b>19129</b>	<b>20.6</b>	<b>20393</b>	<b>55.5</b>	<b>1.0</b>	<b>42.9</b>	<b>0.6</b>

Source: CAO Database, Data as of Dec. 31, 2009  
Mixed means the forest property is divided between state, private and community.  
Before the transition the ratio of private forest was below 1 %.

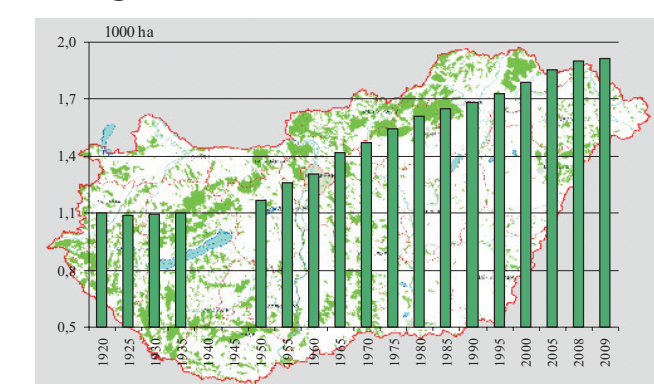
● **Distribution of forests by primary function**



Source: CAO “Report on Forestation and Fellings in 2009”

Protection forests include protective forests (soil, 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 1920-2009**



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

The forest ratio increased from 11.8 % to 20.6 % between 1920 and 2009 because of the subsidised afforestation program.

Afforestations in the past decade (initial plantings)

Growing year	State sector	Other forms of management	Total
	(ha)		
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
2008-2009	791	4377	5168

Source: CAO “Report on Forestation and Fellings in 2009”

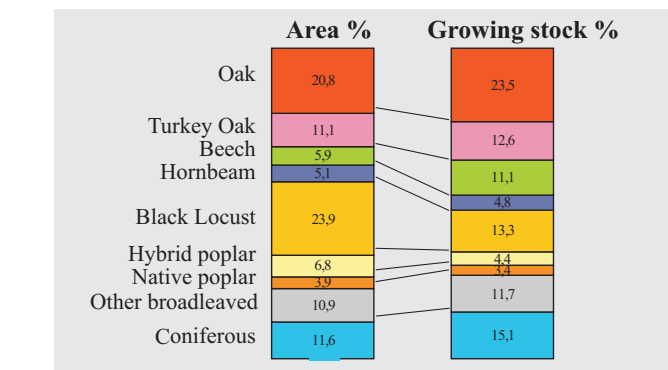
● **Nature-oriented forestry**

Year	Transition system <sup>1</sup>	Selection system <sup>2</sup>	Non-wood-productive forest l.
	(ha)		
2006	4024	4956	44034
2007	8780	7220	47546
2008	13040	9219	51762
2009	19193	17576	55614

Source: CAO Database, 2009;

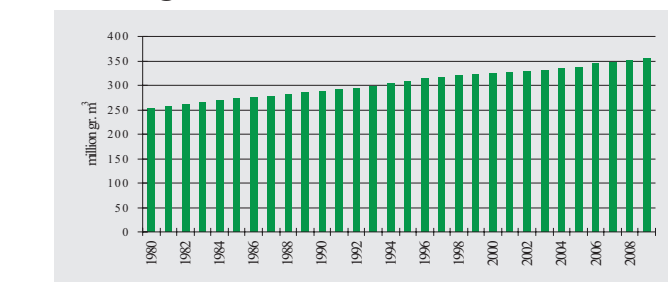
<sup>1</sup>The destination is the achievement of the selection system. <sup>2</sup>Individual trees or groups are harvested periodically and frequently.

● **Tree species distribution**



Source: CAO Database, Data as of Dec. 31, 2009.  
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 1980-2009**

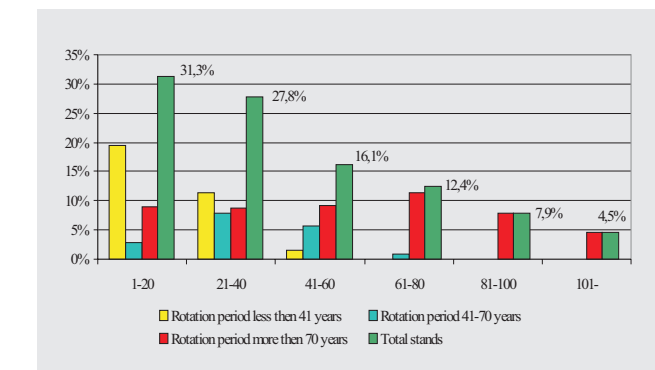


● **Forest ratio in neighbour countries**

	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**

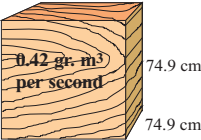


Source: CAO Database, Data as of Dec. 31, 2009.

● **Current annual increment and growing stock**

Current increment by species (%)	
Oak	20.3
Turkey oak	8.1
Beech	6.8
Black locust	24.7
Other hard broadleaved	8.6
Poplar	13.2
Other soft broadleaved	6.0
Coniferous	12.4

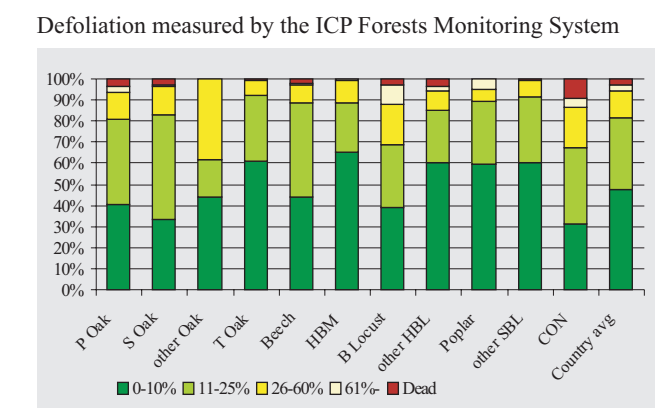
Gross annual increment in Hungarian forests:  
13.2 million m<sup>3</sup>/year



74.9 cm  
74.9 cm  
74.9 cm  
Source: CAO Database

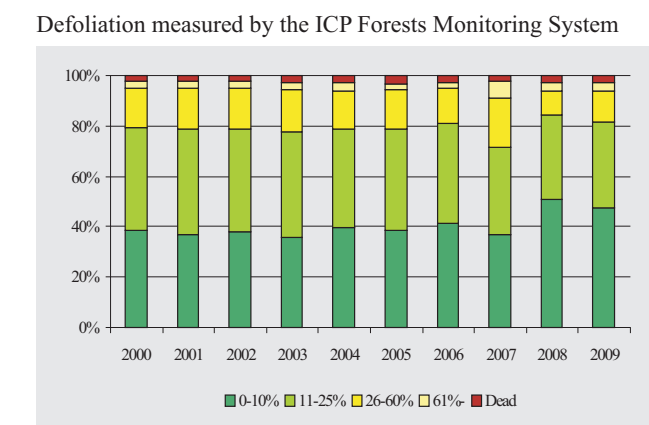
Development of growing stock (million m <sup>3</sup> )			
Jan. 1, 2005	337.0	Dec. 31, 2007	347.4
Jan. 1, 2006	341.4	Dec. 31, 2008	351.9
Dec. 31, 2006	344.1	Dec. 31, 2009	355.8

● **Health conditions in 2009**



Source: CAO Health Conditions Database, 2009.  
Health conditions changed a little in 2009. The number of slightly, medium and severely damaged sample trees has increased while the number of healthy and dead sample trees has decreased.

● **Changes in Health conditions**



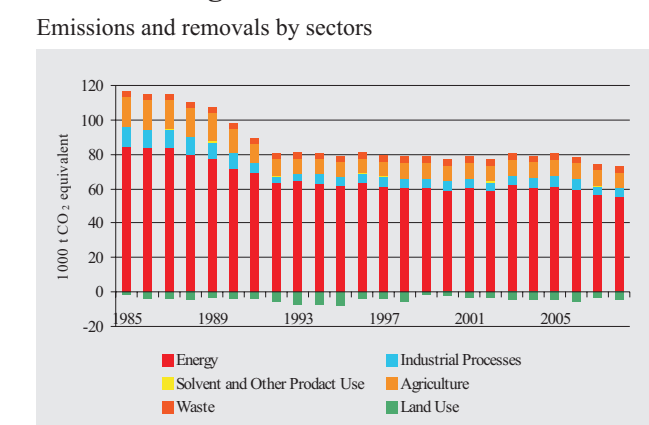
Source: CAO Health Conditions Database

● **Damages in forestations caused by game**

Growing year	Quantitative damage (ha)	Qualitative damage (ha)
2002-2003	427	6470
2003-2004	610	5565
2004-2005	282	5871
2005-2006	216	4440
2006-2007	296	4032
2007-2008	208	3622
2008-2009	145	3433

Source: Cao, technical acceptance protocols of forestations

● **Greenhouse gases**



Source: OMSz, National Inventory Report (NIR 2010)

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.)