

## • Production of forest industry and the timber trade

Production of wood products in 2003

	rate of assortments within the removal <sup>1/</sup> %
Veneer log	1.4
Saw logs	20.9
Other raw material for sawmilling	4.9
Pitprops	0.4
Pulpwood	10.0
Bolt for panels	9.4
Other industrial timber	5.0
Total industrial wood	52.0
Fuelwood	48.0
<b>Total removal</b>	<b>100.0 = 5784.3 thousand m<sup>3</sup></b>

<sup>1/</sup> figures for the national distribution were calculated on the basis of a 66 % survey

Source: State Forest Service (ÁESZ)

Production of selected products in 2003

Product	measurement unit	quantity produced
Coniferous sawnwood	1,000 m <sup>3</sup>	92.4
Broadleaved sawnwood	1,000 m <sup>3</sup>	150.6
Parquet strips	1,000 m <sup>3</sup>	44.4
Furniture strips	1,000 m <sup>3</sup>	7.3
Components for pallets	1,000 m <sup>3</sup>	127.6
Wood particle board	1,000 m <sup>3</sup>	467.2
Laminated particle board	1,000 m <sup>3</sup>	406.8
Cement-bonded wood particle board	1,000 m <sup>3</sup>	22.1
Fibreboard	1,000 m <sup>3</sup>	55.1
Fibreboard, coated and surface treated	1,000 m <sup>3</sup>	22.2
Plywood	1,000 m <sup>3</sup>	17.8
Veneer sheets	million m <sup>2</sup>	37.0
Parquet	1,000 m <sup>2</sup>	2929.8
Match	million boxes	205

Source: ÁESZ

Timber trade in 2003

	Export	Import	Balance
	million HUF		
Solid wood products	18623	16658	1965
Sawn wood products	21033	44872	-23839
Panel products	23822	36167	-12345
Miscellaneous wood products	45965	23114	22851
Total wood products	109443	120811	-11368
Pulp- and paper products	124201	240650	-116449
<b>Grand total</b>	<b>233644</b>	<b>361461</b>	<b>-127817</b>

Source: ÁESZ 2004.1.1.

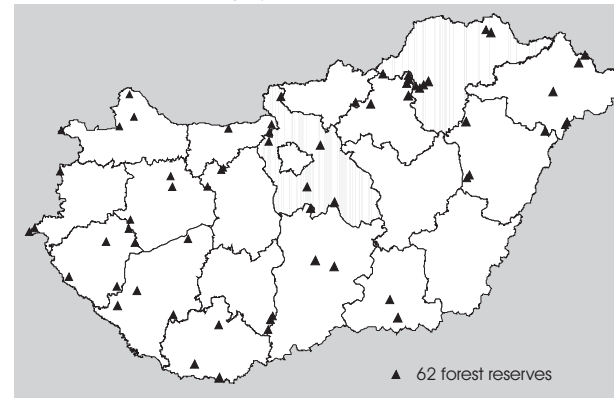
## • Forest protection and conservation

Protected natural areas

	Total area	Forest area
	1,000 hectare	
National parks (10)	484.5	204.5
Landscape protection districts (36)	316.5	171.0
Nature protection areas (142)	27.6	12.0
<b>Protected land of National importance</b>	<b>828.6</b>	<b>387.5</b>

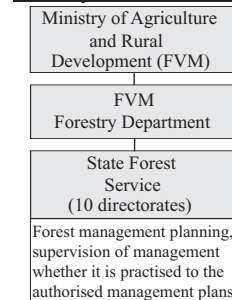
Source: KvVM (Ministry for Environment), Office for Nature Conservation, 2004  
Actually 47 per cent of the protected lands of national importance are covered by forests. The limitations on the management of these lands are imposed by the LIII. Act of 1996 on Conservation.

Forest reserves in Hungary



## • Organisational structure

Forestry administration:



Further higher authorities with certain responsibilities in matters of forestry:

- FVM OMMI, Forestry Department  
Inspectorate on propagative materials
- FVM Department for Fishery and Hunting  
Authoritative control on game management
- KvVM Office for Nature Conservation  
10 Directorates of National Parks  
Authoritative supervision on the forests situated in protected natural area

Forest research: Forest Research Institution (ERTI),  
University of West Hungary

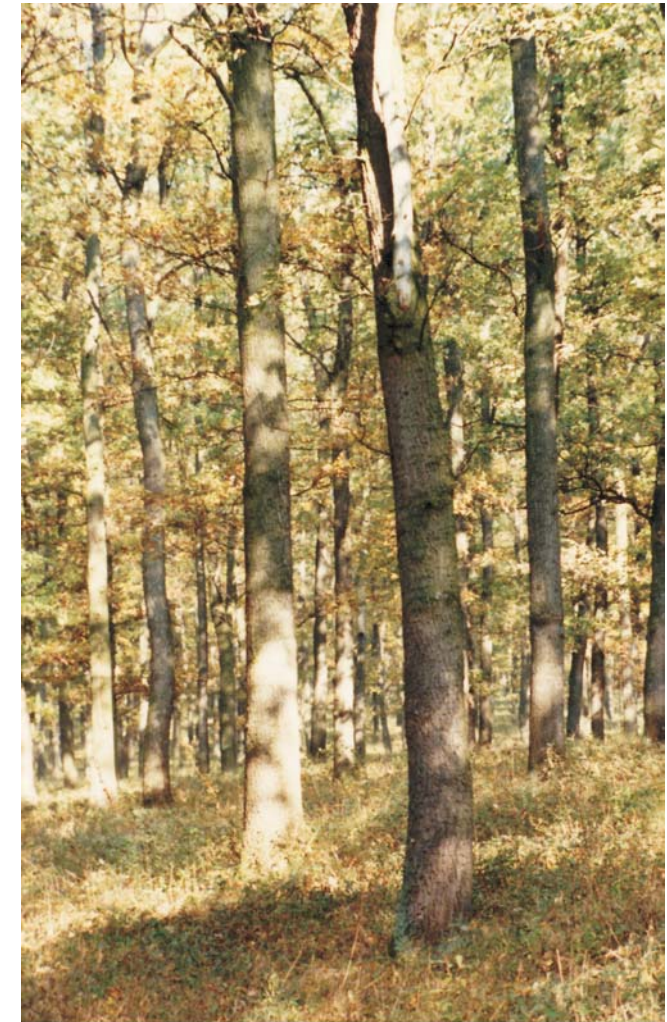
Professional training:

higher education: University of West Hungary  
professional secondary schools: in towns Szeged, Sopron, Mátfafüred, Barcs  
trade schools for skilled forestry workers: in towns Ásotthalom, Szócsénypuszta, Piliscsaba, Miskolc

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I N H U N G A R Y



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## Notable milestones in the history of modern Hungarian Forestry

1791	The parliament enacted the first forest act of feudal type.
1879	The first modern forest act of bourgeois type was issued.
1920	As a result of the peace pact closing First World War Hungary lost 84 % of her forests; the rate of forested land decreased from 26 % to 12 %.
1935	With the announcement of the IV. Act of 1935, a forest act corresponding to the new geographical conditions of the country, as well as the first Hungarian law on nature conservation was promulgated.
1936	Hungary hosted the second World Forestry Congress and the 9th Congress of IUFRO.
1945	Private forest holdings exceeding 58 hectare were nationalised; properties of 6 to 58 hectare were taken into state management.
1959-60	Forest joint tenures were cut back; about 30 % of the forests were assigned to agriculture co-operatives.
1961	Enactment of the VII. Act of 1961 on the forests and wildlife management based on the socialist ownership structure.
1996	As one of the results of the general system transition in Hungary, about 40 % of the forests was privatised. In order to control the multiple-used and sustainable forestry with legislative tool, the Parliament passed the LIV. Act of 1996 on the forests and protection of the forests.

## Major goals of the current forest policy

- ◆ To ensure the environmental, economic and social services of the forests for a long term with sustainable management based on multiple-use of the forests.
- ◆ To orchestrate the harmony between the interests of the management and owners on the one hand, and those of the society in running forestry on a sustainable way, on the other.
- ◆ To maintain the current rate of natural and close-to-nature types of forest stands composed by indigenous tree species, as well as to extend their rate in accordance with the prevailing site conditions.
- ◆ To increase the forested lands with afforestation up to the forest ratio of appr. 25-26 %.

## Some comprehensive facts about Hungary

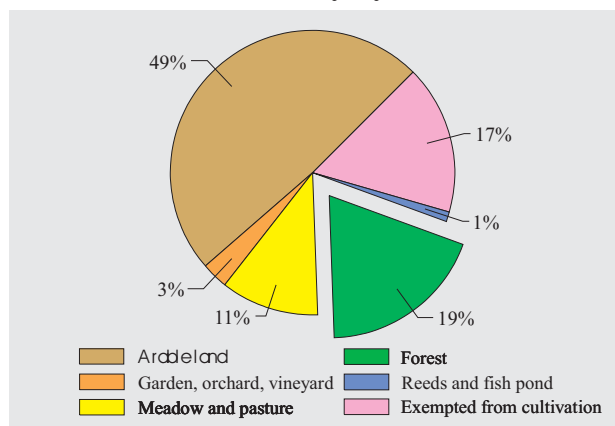
Total area of the country	in 1,000 hectare	9,303.0
Population	capita in millions	10.10
Forest area	in 1,000 hectare	1,836.4
Forest ratio	%	19.7
Forests for 1,000 inhabitants	ha/1,000 capita	182
Lands assigned for forestry use	in 1,000 hectare	1,967.6
Growing stock	in million gross m <sup>3</sup>	334.3
Gross annual increment	in million m <sup>3</sup> /year	12.5
Total fellings	in million gross m <sup>3</sup>	7.1
Final cut, volume	in million gross m <sup>3</sup>	5.0
Final cut, area equivalence	in 1,000 hectare	21.4
Regeneration (initial stand establishment)	in 1,000 hectare	21.3
Afforestation (initial stand establishment)	in 1,000 hectare	12.0
Rate of forest treated on management plans	%	100

Sources: Central Statistical Office (KSH) 2003.01.01.

State Forest Service (AESZ) 2003.01.01.

AESZ National summary of the annual reports of forest inspectorates 2002.

## Total area of the country by land use



Source: KSH 2004.05.31.

## Forest area according to actual figures of the National Forestry Data Base

(as of 2003.01.01.) in 1,000 hectare in per cent of the national territory

Forest area (lands covered by stand + earmarked lands which have to be forested)	1,836.4	19.7
Other lands supporting forestry (nurseries, alleys, forest access roads, permanent clearings, etc.)	131.2	1.4
Total area assigned for forestry use	1,967.6	21.1

## Forested lands and ownership conditions in the counties

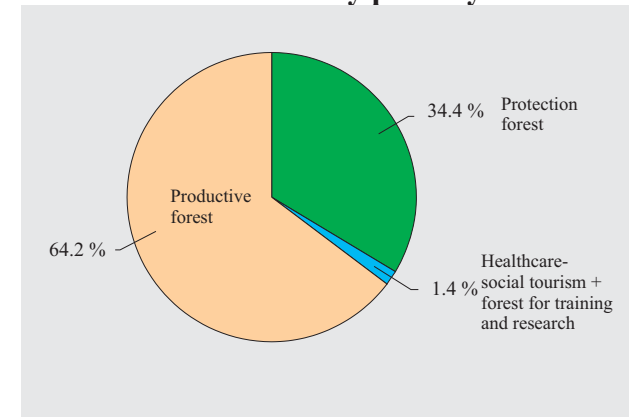
County	Total land km <sup>2</sup>	Forested land km <sup>2</sup>	Forest ratio %	Forestry use km <sup>2</sup>	State %	Common %	Private %	Unknown %
Pest-Budapest	6 918	1 643	23.6	1 762	61.0	1.1	37.9	0.4
<b>Central Hungary</b>	<b>6 918</b>	<b>1 643</b>	<b>23.6</b>	<b>1 762</b>	<b>61.0</b>	<b>1.1</b>	<b>37.9</b>	<b>0.4</b>
Fejér	4 359	538	12.4	621	74.1	1.2	24.6	0.2
Komárom-Esztergom	2 265	607	26.8	655	81.6	0.5	17.7	0.1
Veszprém	4 493	1 311	29.2	1 515	64.3	0.3	35.4	0.0
<b>Central Transdanubium</b>	<b>11 117</b>	<b>2 457</b>	<b>22.1</b>	<b>2 791</b>	<b>70.7</b>	<b>0.6</b>	<b>28.6</b>	<b>0.1</b>
Győr-Ménfőcsanak-Sopron	4 208	807	19.2	897	69.8	0.4	29.8	0.0
Vas	3 336	932	27.9	983	50.3	0.4	49.3	0.0
Zala	3 784	1 132	29.9	1 201	54.4	0.3	44.4	1.3
<b>Western</b>	<b>11 328</b>	<b>2 871</b>	<b>25.3</b>	<b>3 087</b>	<b>57.4</b>	<b>0.3</b>	<b>41.7</b>	<b>0.3</b>
Baranya	4 430	1 078	24.3	1 136	54.6	1.2	34.1	10.0
Borsod-Abaúj-Zemplén	7 247	1 978	27.3	2 077	62.2	1.1	28.9	7.8
Héves	3 637	850	23.4	887	61.1	0.4	37.7	0.8
Nógrád	2 548	956	37.6	994	57.1	0.2	40.9	1.3
<b>Northern Hungary</b>	<b>13 430</b>	<b>3 785</b>	<b>28.2</b>	<b>3 958</b>	<b>60.7</b>	<b>0.7</b>	<b>33.9</b>	<b>4.7</b>
Hajdú-Bihar	6 211	643	10.4	683	46.9	0.9	38.1	14.1
Jász-Nagykun-Szolnok	5 582	316	5.7	339	42.3	2.3	46.9	8.5
Szabolcs-Szatmár-Bereg	5 935	1 055	17.8	1 091	29.8	1.3	53.1	15.8
<b>Northern Plain</b>	<b>17 729</b>	<b>2 014</b>	<b>11.4</b>	<b>2 113</b>	<b>37.2</b>	<b>1.3</b>	<b>47.3</b>	<b>14.1</b>
Bács-Kiskun	8 445	1 605	19.0	1 705	49.3	0.7	45.5	4.6
Békés	5 631	244	4.3	267	60.5	3.1	13.9	22.5
Csongrád	4 263	329	7.7	348	51.8	1.4	29.3	17.6
<b>Southern Plain</b>	<b>18 339</b>	<b>2 178</b>	<b>11.9</b>	<b>2 322</b>	<b>50.9</b>	<b>1.0</b>	<b>39.5</b>	<b>8.5</b>
<b>TOTAL</b>	<b>93 030</b>	<b>18 364</b>	<b>19.7</b>	<b>19 676</b>	<b>57.0</b>	<b>0.8</b>	<b>36.8</b>	<b>5.4</b>

Source: AESZ 2004.01.01.

The class "unknown yet" covers new forest owners not yet registered as forest managers, who have become owners during the transition period as a result of the privatization.

Before the transition the rate of private forest did not exceed 1%.

## Distribution of forests by primary function

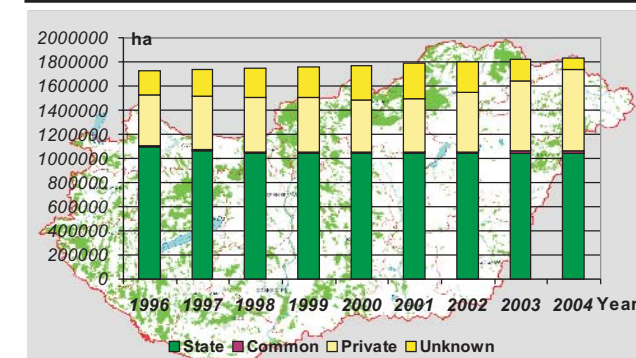


Source: AESZ 2004.01.01.

Protection forest includes protective forest (soil, wildlife, water, settlement protection, etc.) and protected forest (e.g. in protected natural areas). Their share tends to be increased for some decades.

## Changes in forest area, afforestations

Changes in forest area, 1996 - 2003



1/ Following the application of Law 1996/LIV.

Source: AESZ Database

The area covered by forest between 1938-2004 increased from 11.9 % to 19.7 %.

Afforestation in selected years<sup>1/</sup>

Growing season	State sector	Other forms of management	Total for the country
			in 1,000 hektare
1995/96	0,4	6,2	6,6
1996/97	0,4	7,9	8,3
1997/98	0,4	7,8	8,2
1998/99	0,4	8,3	8,7
1999/2000	0,4	9,4	9,8
2000/2001	0,3	12,8	13,1
2001/2002	0,4	14,4	14,8
2002/2003	0,3	11,7	12,0

1/ National summary

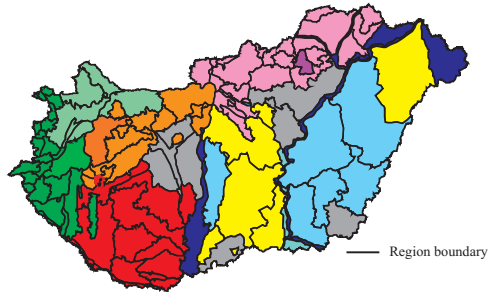
Source: National summary of the annual reports of forest inspectorates

## Site conditions

Distribution by elevation height above the sea level	
area	%
- 150 m	41.4
151 - 350 m	45.8
351 - 750 m	12.4
751 - 1015 m	0.4
<b>Total forest area</b>	<b>100.0</b>

Distribution by forestry climatic zones	
climate	area %
Beech	8.7
Oak - Hornbeam	38.5
Sessile oak - Turkey oak	27.7
Forest steppe	25.1
<b>Total forest area</b>	<b>100.0</b>

### SILVICULTURAL REGIONS OF HUNGARY



### AREAL RATE OF INDIVIDUAL REGION GROUPS:

Region Group	Area %	Growing stock %
1. Western Transdanubia	11.3	11.3
2. Southern Transdanubia	17.1	17.1
3. Small Plain	4.4	4.4
4. Transdanubian Medium Mountains	14.3	14.3
5. Northern Medium Mountains	22.8	22.8
6. Loess region of the Great Plain	2.4	2.4
7. Sandy region of the Great Plain	19.6	19.6
8. Alkali region of the Great Plain	3.5	3.5
9. Peatlands and flooded region of the Great Plain	4.6	4.6
<b>Total</b>	<b>100.0</b>	<b>100.0</b>

Source: ÁESZ 2004.01.01.

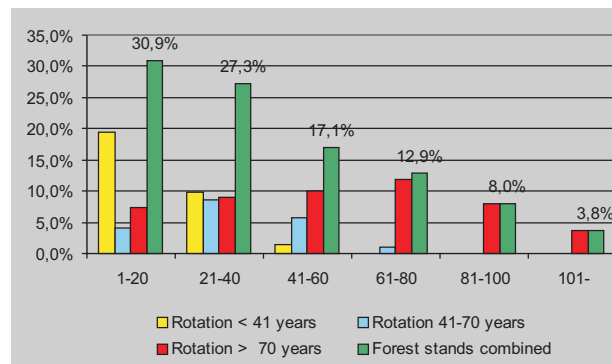
## Tree species distribution

Species	Area %	Growing stock %
Oak	20.5	24.5
Turkey oak	11.5	13.1
Beech	6.0	6.0
Hornbeam	5.5	11.7
Black locust	22.6	5.2
Improved poplar	7.0	3.9
Indigenous poplar	3.3	2.7
Other broad-leaved	10.4	111.1
Conifers	13.3	15.5

Source: AESZ 2004.01.01.

Actually 56 % of the forests area is covered by indigenous tree species in Hungary. The rest (44 %) is occupied either by introduced and domesticated species (such as black locust, red oak and conifers) or by clones (genetically improved poplars).

## Area distribution by age classes



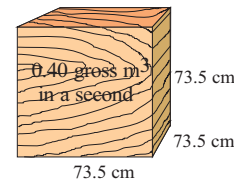
Source: AESZ 2004.01.01. + forestation in process

## Growing stock and gross annual increment

Distribution of the gross annual increment by tree species: %

Oak	20.1
Turkey oak	8.1
Beech	7.0
Black locust	23.0
Other hardwood	8.2
Poplar	12.3
Other soft deciduous	6.4
Conifers	14.9
<b>Total</b>	<b>100.0</b>

Total gross increment grown in the Hungarian forests: 12.5 million m<sup>3</sup>/year =



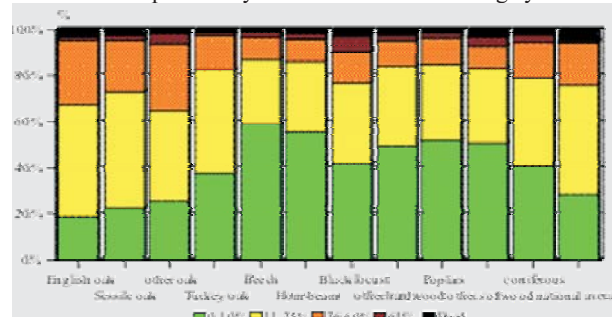
Development of the growing stock:

2000.01.01.	325.2 million m <sup>3</sup>
2001.01.01.	326.4
2002.01.01.	328.8
2003.01.01.	330.9
2004.01.01.	334.3

Source: ÁESZ

## Health conditions

Defoliation as specified by the ICP Forests Monitoring System



Source: ÁESZ Register of health conditions of the forests. 2004.

In general the health condition of the forests didn't change. The rainy weather caused a greener forest aspect.

In 2004 the outbreak of the gypsy moth (*Lymantria dispar*) was high.

## Wildlife management and hunting

Estimated living stock and the amount of shot animals, 2003

Living stock	County						
	Red deer	Fallow deer	Roe deer	Mouflon	Wild boar	Hare	Pheasant
<b>Living stock</b>	<b>2 092</b>	<b>581</b>	<b>5 059</b>	<b>515</b>	<b>6 512</b>	<b>9 092</b>	<b>27 010</b>
<b>Shot</b>	<b>2 092</b>	<b>581</b>	<b>5 059</b>	<b>515</b>	<b>6 512</b>	<b>9 092</b>	<b>27 010</b>

Source: Research Institution for Agro-Economy and Agro-Informatics (AKII)

National trophy qualification in 2003 according to the CIC system

Game	Total evaluated	Prized trophies		
		Gold	Silver	Bronze
Red deer	10265	249	1030	1910
Fallow deer	1721	180	155	198
Roe deer	29509	296	651	1001
Mouflon	793	68	112	105
Wild boar	4744	294	391	694

Source: National Trophy Awarding Commission (Országos Tróféabíráll Bizottság)

Wild living stock is an integrated part of the forest ecosystem representing a considerable natural value. Trophies of red deer, fallow deer and roe deer shot in Hungary are on the top of the world. Licence hunting in Hungary is an important source of income.

In order to ease the damages caused by the game, the major task of the wildlife management is to maintain a balanced stock of games which is in accordance with the interests of conservation, as well as of the farmers and forest managers.

Recorded damages caused by game in the plantation

Growing season	Damage in quantity hectare	
	Damage in quantity	Damage in quality
1998/1999	226	4987
1999/2000	313	4807
2000/2001	715	5219
2001/2002	475	5944
2002/2003	427	6470

Source: ÁESZ Records on the technical revision of plantings



## • Forestation (regeneration and afforestation)

Achievements in the growing season 2002/2003 in hectare

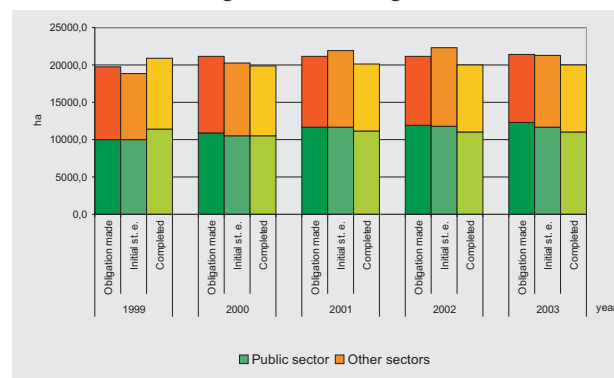
	Public sector	Other sectors	Total
<b>Initial stand establishment (ISE):</b>			
Natural regeneration by seed	2942	536	3478
Natural regeneration by sprout	2036	5157	7193
Artificial regeneration	6358	4246	10620
<b>Total regeneration</b>	<b>11664</b>	<b>9592</b>	<b>21256</b>
<b>Total afforestation</b>	<b>899</b>	<b>11116</b>	<b>12015</b>
<b>Total initial stand establishment</b>	<b>12562</b>	<b>20708</b>	<b>33270</b>
<b>Total blank filling</b>	<b>5182</b>	<b>4748</b>	<b>9930</b>
<b>Initial stand establishment + blank filling</b>	<b>17744</b>	<b>25456</b>	<b>43200</b>
<b>Completed stand establishment:</b>			
in forest regeneration	11023	8942	19964
in afforestation	733	8722	9454
<b>Invested work for 1 ha completed stand establishment:</b>			
in forest regeneration	1.4	1.1	1.3
in afforestation	1.4	1.1	1.2
<b>Unstocked area</b>	<b>2502</b>	<b>8345</b>	<b>10847</b>
<b>Regeneration delay</b>	<b>2556</b>	<b>10824</b>	<b>13380</b>

### Target stand types in the forestation (ISE)

	in forest regeneration	in afforestation %	Total in forestation %
Oak	18.3	12.4	16.1
Turkey oak + other hardwood	12.6	7.5	10.8
Beech	5.7	0.1	3.7
Black locust	37.3	36.7	37.1
Poplar + other soft broadleaf	22.9	41.2	29.5
Conifers	3.2	2.1	2.8
<b>Total</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: National summary of the annual reports of forest inspectorates 2003

### Achievements and obligations in forest regeneration. 1999-2003.



Source: ÁESZ, National summary of the annual reports of forest inspectorates

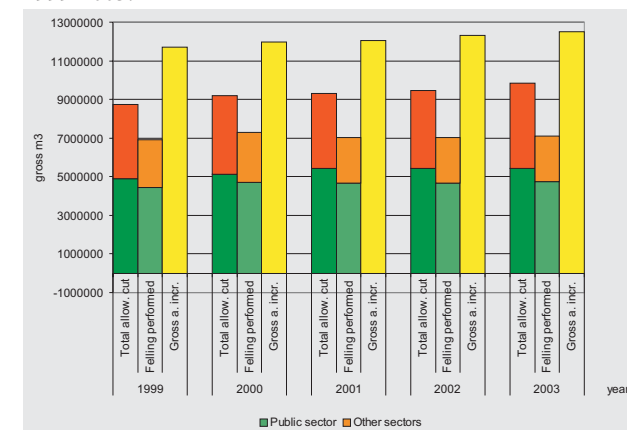
## • Fellings

Felling achievements in 2003

	Public sector	Other sectors	Total
<b>by type of felling:</b>	in 1,000 gross m <sup>3</sup>		
Final cut	3267	1777	5044
Increment thinning	588	124	712
Selection thinning	456	228	684
Cleaning	201	121	322
Sanitary cut	201	59	260
Other cut	30	34	64
<b>Total</b>	<b>4743</b>	<b>2343</b>	<b>7086</b>
	hectare		
Area equivalent of final cuts	12166	9213	21379
Area of increment thinning	14491	3319	17810
Area of selection thinning	18184	7740	25925
Area of cleaning	18757	8582	27340
<b>by groups of tree species:</b>	in 1,000 m <sup>3</sup>		
Oak	922	211	1133
Turkey oak	838	184	1022
Beech	609	70	679
Hornbeam	277	71	348
Black locust	568	959	1527
Other hard broad-leaved species	154	40	194
Improved poplars	442	480	921
Indigenous poplar	148	58	206
Other soft broad-leaved	192	98	290
Conifers	593	172	766
<b>Total</b>	<b>4743</b>	<b>2343</b>	<b>7086</b>

Source: National summary of the annual reports of forest inspectorates 2003.

### Fellings and the total annual increment of the forest stands. 1999-2003.



Source: ÁESZ, National summary of the annual reports of forest inspectorates.

The amount of the allowable cut in the Hungarian forests is defined by the 10 year Forest Management Plans which are prepared and assembled for the forest holdings on the account of the state budget. The actual forest treatments performed by the responsible manager are approved and recorded by the locally competent forest inspectorate year by year.