Official Statistics of Norway D 391

Forestry Statistics 2006

Statistisk sentralbyrå • Statistics Norway
Oslo–Kongsvinger

Official Statistics of Norway

This series consists mainly of primary statistics, statistics from statistical accounting systems and results of special censuses and surveys. The series is intended to serve reference and documentation purposes. The presentation is basically in the form of tables, figures and necessary information about data, collection and processing methods, in addition to concepts and definitions. A short overview of the main results is also included

The series also includes the publications Statistical Yearbook of Norway and Svalbard Statistics.

ISBN 978-82-537-7339-1 Printed version
ISBN 978-82-537-7340-7 Electronic version

Topic

10.04

Print: Statistics Norway

Symbols in tables	**Symbol**
Category not applicable	.
Data not available	..
Data not yet available	...
Not for publication	:
Nil	-
Less than 0,5 of unit employed	0
Less than 0,05 of unit employed	0,0
Provisional or preliminary figure	*
Break in the homogeneity of a vertical series	—
Break in the homogeneity of a horzontal series	|
Decimal punctuation mark	,

Preface

NOS Forestry Statistics is issued annually and contains a comprehensive survey on forestry statistics collected by Statistics Norway. Forestry Statistics 2006 contains statistics on forest resources, forest properties, silviculture, forest roads, production, forest owners, economy etc.

The main forestry statistics were previously published in "Today's statistics" and are available on the Internet: (http://www.ssb.no/skog).

In addition to tables in this publication it is also possible to obtain other or more detailed tables by applying directly to Statistics Norway. These tables can be transmitted electronically or by paper.

This publication has been prepared by Hanne Haanæs. Ole Osvald Moss, Head of Division for Primary Industry Statistics, is responsible for the publication.

Statistics Norway
Oslo/Kongsvinger, 25 February 2008

Øystein Olsen

Nils Håvard Lund

Contents

List of tables

1. Introduction

The purpose of this publication is, as far as possible, to present statistics on Norwegian forestry. The publication comprises the following main subjects:

- The National Forest Inventory
- Silviculture
- Forest roads
- Commercial roundwood removals
- Forest properties and forest owners

2. The National Forest Inventory

2.1. Introduction and history

The National Forest Inventory is a sample plot inventory aimed at providing data on natural resources and the environment for forest land in Norway. The Inventory is conducted by the Norwegian Forest and Landscape Institute. Inventory work was started in 1919, with the different inventory cycles taking place in the following years:

1: 1919-30
2: 1937-56
3: 1957-64
4: 1964-76
5: 1980-86
6: 1986-93
7: 1994-98
8: 2000-04

The entire country (except Finnmark county) was surveyed during the most recent period. Each inventory cycle covers the most important forest districts, while inventories in western and northern Norway have been carried out less frequently and are sometimes incomplete.

2.2. Users and applications

The most central users of the results from the National Forest Inventory are public administration at national and county level. The results serve as important input for the formation of forestry policies and control the effects of it.

In recent years, the demand for national forestry statistics has increased, and the National Forest Inventory is a central data source. Data from the inventories are used for example in research to develop descriptive models of forest dynamics.

The forest industry is an important user of the data. Among others thing, they need the data for strategic planning in the sawmill and pulp industry. The data are also used by educational institutions and by professionals in agriculture, forestry and environmental protection.

2.3. Population and publishing

The statistics include all counties except Finnmark, however Finnmark will also be surveyed during the present five-year cycle.

The figures are published annually.

2.4. Data sources and collection of data

The only data source is the National Forest Inventory's database. One of the main tasks of the National Forest Inventory is the assessment of timber resources. Data are collected so that the volume can be computed for different tree species, diameters and quality classes. Numbers of trees and annual increments are also calculated.

The National Forest Inventory's data collection is based on data from permanent sample plots. For the entire country except Finnmark, a systematic sample plot inventory in a bond by 3 x 3 kilometres is established. In the present inventory cycle, sample plots for Finnmark are also established. The plots are visited every five years and the survey forms the basis for statistics for the whole of Norway. In order to publish data by county, temporary plots are established in the counties when each county is appraised. Each county is appraised every fifteen years. An extensive number of attributes concerning forest conditions are recorded on the plots, some of which describe the area. Parameters that characterise level of development and species composition of the vegetation, certain aspects of biodiversity, utilisation and yield capacity of the land, forest treatment, conditions surrounding forest operations, etc., are measured or estimated. Inside a 250 square metre circle, every tree with a diameter of more than five centimetres in breast height (1.3 metres above ground level) is callipered.

2.5. Sampling

The sampling design has changed considerably over the years. The first two cycles were carried out as strip sampling inventories. A system of parallel strips was established throughout the area of interest, and measurements were taken within these strips. In the middle of the 1950s, the strip sampling was replaced by a systematic sample plot inventory, a method which has also been used subsequently. However, minor alterations concerning sampling design have been made several times.

An important difference between the period 1986-1993 and the previous inventory cycles was the introduction of permanent sample plots. A sub-sample of the established plots was marked in order to be able to re-measure the exact same area in future inventories. This was to provide greater possibilities for detecting changes in forest conditions. The permanent plots were re-measured during the period 1994-1998, according to a specific pattern. The inventory of one single year will provide representative results for the whole country.

Highly conspicuous markings are avoided in order to prevent the location of the plots from being too obvious to passers-by. The permanent plots should represent a random sample of the forests in Norway, and should not be treated any different than the rest of the forests. A total of approximately 16 000 permanent sample plots have been established, of which about 10 500 are located on productive forest and other wooded land below the coniferous forest limit. On average, the sampled area comprises about 3×10^{-5} of the surveyable area.

2.6. Control and revision

Before each field season, training is held for the field crew. During the field season, the office staff visit the field workers at least once and some controls are carried out. In most cases, a control of the assessment is done. About 5 per cent of the sample plots are surveyed once more.

Corrections of the field instructions are made before every field season. A main revision is carried out every five years.

2.7. Estimation

In order to estimate figures, for instance for a county, the area factor must be known. In a 3 x 3 kilometre net the area factor will be close to nine square kilometres or 900 hectares. Each sample plot will represent 900 hectares. For each tree measured, a volume with and without bark and the increment are estimated. Multiplying this with the area factor will establish how much each tree represents in this area. The volume for the growing stock in a county for instance can be found by summarising the volume of each measured tree in the county multiplied with the area factor.

2.8. Concepts, variables and classifications

Definitions of the main concepts and variables

Growing stock: total volume of the standing forest under bark. Comprises trees with a diameter of at least five centimetres at breast height (1.3 metres above ground level).

Annual increment: annual volume increment in standing forest inside bark.

Standard classifications

Development class: Describes the forest's development class from non-regenerated forest to mature forest.
In the current system the following definitions are used:
Development class I: forest under regeneration (non-stocked land and very sparsely stocked stands)
Development class II: regenerated areas and young forest
Development class III: young thinning stands
Development class IV: advanced thinning stands
Development class V: mature forest

Site quality class: an expression of the area's capacity to produce wood when stocked with a tree species suitable for the local growing conditions. The site quality of the H_{40}-system is based upon the top height (the middle height of the hundred trees per hectare with the largest diameter) of the trees at the age of 40 years at breast height (1.3 metre above ground level).

2.9. Sources of error and uncertainty

Measurement and processing errors

Systematic errors are caused by errors or uncertainties in measurement, estimation and recording in the field, which are one-sided. Efforts are being made to reduce these errors as far as possible by training the field crews and checking their measurements. An example of errors of this type is the possibility of apparent area changes for productive forest land, which are really caused by different methods of judging the coniferous forest limit. The magnitude of systematic errors cannot normally be calculated.

Sampling errors

Random errors of the results are caused by the limited sample of the forest area and wood resources measured by the inventory, in addition to random errors of measurement. A measure for the random error is the so-called standard error, which is possible to calculate. The root mean square error (RMS error) depends on the number of sample plots and the variance of the parameter of interest, for instance volume of growing stock. If the observations are divided into more groups, the magnitude of the RMS error will be higher within each group.

2.10. Comparability and coherence

The National Forest Inventory carried out the first assessment at county level in 1919.

Statistics Norway estimated the productive forest area from The Sample Survey of Agriculture and Forestry and The Census of Agriculture and Forestry 1979 and 1989.

2.11. Main results

The volume of growing stock continues to increase. According to calculations from the National Forest Inventory, the volume has increased by 12.3 million cubic metres since 2005. The total growing stock in Norwegian forests is now 748 million cubic metres.

The annual increment seems to have stabilised at about 25.5 million cubic metres. For the first time, the increment decreased slightly from 2005 to 2006. In 1933, the annual increment was ten million cubic metres.

Spruce is the most common species of tree, accounting for 45 per cent of growing stock, followed by pine with 33 per cent and broad-leaved with 22 per cent. During recent decades, the share of broad-leaved has increased and spruce decreased. In 1967, spruce amounted to 52 per cent and broad-leaved 17 per cent. The share of pine has been stable in the period. The growing stock of all species of tree has increased, and is now 70 per cent larger than 40 years ago. After the last calculations including the survey in 2006, growing stock amounted to 748 million cubic metres. The Norwegian growing stock is only a quarter of that of Sweden; the most heavily timbered country in Europe.

Spruce is most common in Sør-Trøndelag and Nord-Trøndelag and represents 63 per cent of the volume of growing stock in these counties. In the heavily forested counties in the eastern part of Norway, spruce also amounts to more than half of the volume. In the northern part of Norway, broad-leaved is most common, with 63 per cent of the volume of growing stock. In the western parts of the country, the growing stock volume is the same for spruce, pine and broad-leaved. Fifteen years ago, spruce corresponded to a quarter of the volume.

The productive forest area below the coniferous forest line, except for Finnmark, is estimated at 74 148 square kilometres. In addition, 17 100 square kilometres is considered to be unproductive forest area. The total area of wooded land is approximately 120 000 square kilometres.

2.12. Availability

http://www.ssb.no/english/subjects/10/04/20/lst_en/

More tables in StatBank

06286: Productive forest area, by development class (1957-1964 - 2002-2006)
06287: Productive forest area, by development class, site quality and surveyed regions (1996-2000 - 2002-2006)
06288: Productive forest area, except area under regeneration, by species of tree and surveyed regions (km²) (1996-2000 - 2002-2006)
06290: Growing stock under bark, by type of land, species of tree and surveyed regions (1 000 m³) (1996-2000 - 2002-2006)
06292: Total area, by type of vegetation and surveyed regions (km²) (1996-2000 - 2000-2004)
06291: Annual increment under bark, by type of land, species of tree and surveyed regions (1 000 m³), (1996-2000 - 2002-2006)

Storage of microdata

Microdata are stored by The National Forest Inventory.

2.1. Growing stock inside bark and annual increment inside bark. The whole country. 1933-2006. 1 000 m³

Year of inventory	Growing stock				Annual increment			
	Total	Spruce	Pine	Broad-leaved	Total	Spruce	Pine	Broad-leaved
1933	322 635	170 960	90 002	61 673	10 447	5 835	2 535	2 077
1967	435 121	226 168	133 972	74 981	13 200	7 131	3 364	2 706
1986	543 234	261 359	177 771	104 104	18 579	9 951	4 838	3 790
1987	552 414	263 992	180 634	107 788	18 958	10 103	4 935	3 920
1988	561 004	266 383	183 014	111 607	19 321	10 249	5 018	4 054
1989	569 664	268 497	185 642	115 525	19 688	10 388	5 109	4 191
1990	578 317	270 543	188 279	119 495	20 058	10 528	5 200	4 330
1991	588 476	273 333	191 540	123 603	20 485	10 703	5 310	4 473
1992	599 243	276 788	194 806	127 649	20 921	10 892	5 411	4 618
1993	609 399	279 968	197 904	131 526	21 337	11 070	5 498	4 769
1994-1998	651 688	292 018	218 305	141 364	21 945	11 219	5 855	4 871
1999	685 682	304 081	229 874	151 727	23 076	11 684	6 163	5 229
2000	697 998	308 614	233 949	155 436	23 488	11 858	6 273	5 357
2000-2004	720 789	323 213	238 137	159 439	25 540	13 709	6 151	5 680
2001-2005	735 610	331 236	241 730	162 644	25 674	13 868	6 092	5 714
2002-2006	747 945	336 201	244 622	167 122	25 526	13 746	6 010	5 769

Source: The Norwegian Forest and Landscape Institute. The National Forest Inventory and Statistics Norway, resource account for forestry.

2.2. Total area, by type of vegetation and surveyed regions. km²

Region	Year of inventory	Total	Below the coniferous forest line						Above the coniferous line[1]
			Total	Productive forest land	Un-productive forest	Broad-leaved, spruce and pine bogs	Sedge and peat bogs	Other area[1]	
Appraised regions, total	**2000-2004**	**275 122**	**150 969**	**74 148**	**17 099**	**6 032**	**7 652**	**46 037**	**124 153**
Østfold, Akershus, Oslo og Hedmark	2000-2004	36 942	30 075	18 955	1 310	1 518	817	7 474	6 867
Oppland, Buskerud og Vestfold	2000-2004	42 334	24 004	14 413	2 078	737	891	5 885	18 330
Telemark, Aust-Agder og Vest-Agder	2000-2004	31 808	21 112	11 181	3 349	456	778	5 347	10 696
Rogaland, Hordaland, Sogn og Fjordane og Møre og Romsdal	2000-2004	58 499	25 456	9 358	2 674	590	1 041	11 793	33 043
Sør-Trøndelag og Nord-Trøndelag	2000-2004	41 228	24 292	10 150	3 222	2 004	2 344	6 572	16 936
Nordland og Troms Romsa	2000-2004	64 311	26 030	10 091	4 465	726	1 782	8 966	38 281
Finnmark Finnmárku	2000-2004	..	..	..	..	..	..	..	..

[1] Including freshwater.

Source: The Norwegian Forest and Landscape Institute. The National Forest Inventory, 2000-2004.

2.3. Productive forest area[1], by development class. 1 000 hectares and per cent

Year of inventory	Total	Development class				
		I	II	III	IV	V
	1 000 hectares					
1951-1964	3 038	355	401	413	1 210	659
1964-1976	3 101	218	809	405	950	719
1982-1984	3 240	253	838	584	760	805
1986-1992	3 286	171	766	678	707	964
1994-1998	3 330	139	800	726	657	1 008
1998-2002	3 370	124	815	728	667	1 036
1999-2003	3 365	120	807	722	672	1 045
2001-2005	3 362	94	803	727	685	1 053
2002-2006	3 368	94	802	742	673	1 056
	Per cent					
1951-1964	100	12	13	14	40	22
1964-1976	100	7	26	13	31	23
1982-1984	100	8	26	18	23	25
1986-1992	100	5	23	21	22	29
1994-1998	100	4	24	22	20	30
1998-2002	100	4	24	21	20	31
1999-2003	100	4	24	21	20	31
2001-2005	100	3	24	22	20	31
2002-2006	100	3	24	22	20	31

[1] Refer to the counties Østfold, Akershus,Oslo, Hedmark, Oppland, Buskerud and Vestfold. These are the only counties that are included in all the inventory cycles presented.

Source: The Norwegian Forest and Landscape Institute. The National Forest Inventory, 2002-2006.

2.4. Growing stock under bark, by type of land, species of tree and surveyed regions. 1 000 m³

Region	Year of inventory	Total	Productive forest land				Other types of land. Included Productive forest land in protected areas			
			Total	Spruce	Pine	Broad-leaved	Total	Spruce	Pine	Broad-leaved
Surveyed regions, total	**2002-2006**	**747 945**	**695 700**	**323 349**	**217 970**	**154 382**	**52 245**	**12 852**	**26 652**	**12 741**
Østfold, Akershus, Oslo og Hedmark	2002-2006	207 299	198 824	102 406	72 643	23 775	8 476	2 311	4 795	1 370
Oppland, Buskerud og Vestfold	2002-2006	161 640	152 039	86 319	41 345	24 375	9 601	4 758	2 481	2 361
Telemark, Aust-Agder og Vest-Agder	2002-2006	135 063	122 302	41 816	51 861	28 625	12 760	2 530	7 894	2 336
Rogaland, Hordaland, Sogn og Fjordane og Møre og Romsdal	2002-2006	99 924	93 470	28 690	33 090	31 690	6 454	196	3 939	2 319
Sør-Trøndelag og Nord-Trøndelag	2002-2006	90 284	80 506	50 664	14 446	15 395	9 779	2 612	5 692	1 475
Nordland og Troms-Romsa	2002-2006	53 735	48 559	13 454	4 584	30 521	5 176	445	1 851	2 880
Finnmark-Finnmárku	2002-2006	..	..	..	..	..	..	..	..	..

Source: The Norwegian Forest and Landscape Institute. The National Forest Inventory, 2002-2006.

2.5. Annual increment under bark, by type of land, species of tree and surveyed regions. 1 000 m³

Region	Year of inventory	Total	Productive forest land				Other types of land. Included Productive forest land in protected areas			
			Total	Spruce	Pine	Broad-leaved	Total	Spruce	Pine	Broad-leaved
Surveyed regions, total	**2002-2006**	**25 526**	**24 418**	**13 505**	**5 500**	**5 413**	**1 108**	**241**	**510**	**357**
Østfold, Akershus, Oslo og Hedmark	2002-2006	7 765	7 568	4 422	2 119	1 028	197	47	106	44
Oppland, Buskerud og Vestfold	2002-2006	5 407	5 227	3 321	935	972	180	87	32	61
Telemark, Aust-Agder og Vest-Agder	2002-2006	4 347	4 093	1 810	1 257	1 026	254	45	144	65
Rogaland, Hordaland, Sogn og Fjordane og Møre og Romsdal	2002-2006	3 679	3 511	1 730	755	1 026	169	9	89	70
Sør-Trøndelag og Nord-Trøndelag	2002-2006	2 663	2 481	1 624	310	547	182	44	101	36
Nordland og Troms Romsa	2002-2006	1 664	1 538	599	125	815	126	8	37	81
Finnmark Finnmárku	2002-2006	..	..	..	..	..	..	..	..	..

Source: The Norwegian Forest and Landscape Institute. The National Forest Inventory, 2002-2006.

3. Silviculture

3.1. Introduction and history

The purpose of the statistics is to provide information at county level on silviculture and forest drainage.

The structure of the forest administration prescribed in the Forestry Act of 1932 provided a platform for collecting statistical data on silviculture work etc. approved by the Forest Service and was thereby entitled to receive subsidies. Silviculture statistics begin with the fiscal year 1935/36. Prior to that, the Ministry of Agriculture compiled statistics on silviculture, ditch cleaning and fertilizing of forests. The completed figures have been published by Statistics Norway. Statistics on new ditches for forest drainage have previously been compiled entirely by Statistics Norway on the basis of data from the Ministry of Agriculture and Food. Statistics Norway has compiled all silviculture statistics since 1997.

3.2. Users and applications

The statistics are used by public agencies (Ministries, county authorities), forest owners' organisations and research institutes. Results from the silviculture statistics are included in the Aggregate Account for Forestry, which is compiled by Statistics Norway.

3.3. Population and publishing

The statistics only cover activities financed wholly or partly by the Forest Trust Fund and/or by government subsidies.

The Forest Trust Fund is a legalised fund where the forest owners set apart a certain amount of the gross value of their roundwood sold. Money from the fund can be used by the owner for forest investments, such as planting, clearing, drainage etc.

The figures are published annually.

3.4. Data sources and collection of data

The silviculture statistics are based on information from the Norwegian Agricultural Authority (SLF) and their database on the Forest Trust Fund (SKAS).

The Forest Service in each municipality keeps the Forest Trust Fund Account. The account is reported to the County Department of Agricultural Affairs (FMLA). The Norwegian Agricultural Authority obtains data from the databases and organises them in files forwarded to Statistics Norway.

3.5. Control and revision

If the data are unclear, the Norwegian Agricultural Authority or County Department of Agricultural Affairs is contacted so that any errors can be corrected.

3.6. Estimation

The statistics are published at county level.

3.7. Concepts, variables and classifications

Definitions of the main concepts and variables

Number of plants planted: forest regeneration and supplementary planting.

Planting cost, total: total cost of plants and planting. Covers both forest regeneration and supplementary planting.

Tending of young stands: tending of young forest stands until first thinning.
Scarification: spot removal of vegetation in order to improve the conditions for natural regeneration and the growth of forest plants.

3.8. Sources of error and uncertainty

Measurement and processing errors

In some cases, the reported areas in the Forest Accounts are estimated. Adaptations to the subsidies system can also occur.

3.9. Comparability and coherence

Comparability over time and space

During the period 1935/36 - 1949/50, the statistics apply to the fiscal year. In 1951, the calendar year was adopted, but the data for this year were combined with the data for the second half of 1950. The transition data from fiscal year to calendar year consequently cover 1½ years. The 1998 figures for Finnmark and 1999 figures for Troms are missing.

Coherence with other statistics

Results from the Silviculture statistics may be compared with some of the results from the Sample Survey of Agriculture and Forestry 2004. The Sample Survey of Agriculture and Forestry 2004 are available via the following link:
http://www.ssb.no/english/subjects/10/04/20/skogbruk_en/

3.10. Main results

In 2006, a total of 12 000 hectares were planted, an increase of 15 per cent from the year before. Not since 2002 has more forest been planted.

During the last 15 years there has been a gradual decrease in forest planting. From the 1980s to the beginning to the 1990s, around 30 000 hectares were planted yearly. In 1994, the planted area was reduced to approximately 20 000 hectares, and in 2005 to around 10 000 hectares.

The tended area increased by 15 000 hectares from 2003 to 2004. In 2004, the public subsidies were reintroduced, and thus represent the main reason for the increase. In total, 21 800 hectares of young forest were tended in 2006, which is 6 500 hectares less than in the previous year.

Scarification involves the removal of vegetation to improve conditions for natural regeneration and growth of forest plants. A total of 6 300 hectares were scarified in 2006; an increase of 1 400 hectares from 2005. 53 per cent of the scarification was carried out in Hedmark county.

There has been a sharp decline in the drainage of bogs and woodland in recent years. This is mainly due to greater environmental awareness and reduced public subsidies. In 2006, a total area of 220 hectares of forest ground and bogs were drained.

The use of chemical eradicants for cleaning and combating weeds in forestry has dropped in recent years. In 2006 a total of 480 hectares were sprayed; 220 hectares less than in 2005.

A total of NOK 170 million was invested in silviculture in 2006. Government subsidies covered NOK 43 million, and the forest owners paid the remaining NOK 127 million.

3.11. Availability

http://www.ssb.no/english/subjects/10/04/20/skogkultur_en/

More tables in StatBank

05543: Fertilizing of forest (C) (1997-2006)
05542: Chemical cleaning and weed combating (C) (1995-2006)
06108: Expenditure and public subsidies on silviculture (NOK 1 000). (C) (2005-2006)
03679: Scarification. Area and expenditure (C) (1997-2006)
03677: Forest drainage. Area drained and length of ditches (C) (1997-2006)
05578: Forest drainage, by expenditure and subsidies (NOK 1 000). (C) (1995-2006)
03522: Forest planting (C) (1982-2006)
05544: Young forest tending (C) (1995-2006)
03523: Clearing and weed combating (C). The Table is closed (1982-2003)

Storage of microdata

Microdata are stored in Statistics Norway.

3.1. Forest regeneration[1], by county

Year County	Planting		
	Area	Number of plants[2]	Expenditure[2]
	Decares	1 000 pieces	NOK 1 000
1991	290 863	62 075	174 586
1992	281 107	57 874	161 989
1993	226 831	47 174	140 077
1994	203 562	44 653	131 578
1995	227 437	46 839	145 771
1996	218 109	45 530	145 129
1997	205 074	39 970	135 891
1998[3]	205 019	42 561	151 219
1999	190 369	37 940	142 704
2000	187 796	37 392	145 016
2001	182 521	34 966	139 905
2002	158 232	29 031	120 006
2003	109 332	18 759	77 512
2004	114 535	18 417	77 169
2005	103 468	16 818	72 909
2006	119 390	19 192	84 599
2006			
County			
Østfold	3 940	752	3 368
Akershus og Oslo	6 294	1 120	4 880
Hedmark	29 869	4 646	18 388
Oppland	23 444	3 717	15 950
Buskerud	8 732	1 367	6 533
Vestfold	3 523	580	3 272
Telemark	7 177	936	4 869
Aust-Agder	2 780	457	2 157
Vest-Agder	2 121	337	1 896
Rogaland	979	228	1 258
Hordaland	526	130	570
Sogn og Fjordane	699	188	824
Møre og Romsdal	1 311	283	1 362
Sør-Trøndelag	8 463	1 306	5 652
Nord-Trøndelag	14 765	2 379	9 979
Nordland	4 268	649	3 015
Troms Romsa	499	119	628
Finnmark Finnmárku	-	-	-

[1] The figures only comprise work financed with forest trust fund or government subsidies. [2] Includes supplementary planting. [3] Figures for Finnmark Finnmárku are missing.

Source: Silviculture, Statistics Norway.

3.2. Forest drainage[1,2], by county

Year County	Ditches	Area drained					Expenditure	Of wich government subsidies
		Total	Woodland	Nutritious gradual flow bogs	Other gradual flow bogs	Ombrogenous bogs		
	km	Decare					NOK 1 000	
1991	1 716	29 920	25 177	2 704	1 853	186	12 147	4 596
1992	1 233	22 441	18 513	2 550	1 334	44	9 313	3 608
1993	908	16 969	13 776	2 030	1 061	102	6 664	2 389
1994	683	12 969	11 706	350	884	29	5 046	1 642
1995	413	7 978	7 370	323	285	-	3 281	936
1996	339	7 774	7 139	328	307	-	2 556	649
1997	269	4 464	4 069	115	256	24	2 056	543
1998[3]	320	7 044	6 347	314	297	86	2 419	775
1999	312	5 666	5 116	150	386	14	2 497	687
2000	213	3 856	3 551	17	288	-	1 724	503
2001	176	4 149	4 055	21	73	-	1 491	394
2002	160	3 903	3 770	-	133	-	1 424	343
2003	36	943	901	30	12	-	343	-
2004	55	2 861	2 804	29	28	-	554	125
2005	64	1 627	1 575	4	48	-	607	203
2006	77	2 197	2 176	20	1	-	711	251
2006								
County								
Østfold	-	-	-	-	-	-	-	-
Akershus og Oslo	-	-	-	-	-	-	-	-
Hedmark	3	117	116	-	1	-	33	-
Oppland	3	18	18	-	-	-	20	-
Buskerud	0	30	30	-	-	-	29	-
Vestfold	-	-	-	-	-	-	-	-
Telemark	-	-	-	-	-	-	-	-
Aust-Agder	0	2	2	-	-	-	4	-
Vest-Agder	-	-	-	-	-	-	-	-
Rogaland	0	13	13	-	-	-	5	3
Hordaland	-	-	-	-	-	-	-	-
Sogn og Fjordane	-	-	-	-	-	-	-	-
Møre og Romsdal	22	541	541	-	-	-	192	86
Sør-Trøndelag	13	267	267	-	-	-	113	65
Nord-Trøndelag	36	1 209	1 189	20	-	-	315	98
Nordland	-	-	-	-	-	-	-	-
Troms Romsa	-	-	-	-	-	-	-	-
Finnmark Finnmárku	-	-	-	-	-	-	-	-

[1] The figures only comprise work financed with forest trust fund or government subsidies. [2] New ditches. [3] Figures for Finnmark Finnmárku are missing.
Source: Silviculture, Statistics Norway.

3.3. Silviculture[1], by county

Year County	Area	Expenditure
	Decares	NOK 1 000
2002	308 973	77 219
2003	112 259	28 679
2004	259 699	68 879
2005	282 535	78 652
2006	217 653	63 938
2006		
County		
Østfold	14 930	4 563
Akershus og Oslo	19 525	5 374
Hedmark	49 514	14 919
Oppland	17 608	5 421
Buskerud	23 078	7 551
Vestfold	12 039	3 399
Telemark	16 278	4 650
Aust-Agder	13 693	3 778
Vest-Agder	6 904	2 061
Rogaland	1 716	646
Hordaland	1 242	731
Sogn og Fjordane	681	314
Møre og Romsdal	3 895	1 175
Sør-Trøndelag	7 422	1 952
Nord-Trøndelag	21 132	5 184
Nordland	6 402	1 651
Troms Romsa	1 594	569
Finnmark Finnmárku	-	-

[1] The figures only comprise work financed with forest trust fund or government subsidies.
Source: Silviculture, Statistics Norway.

3.4. Scarification[1]. Area and expenditure, by county

Year County	Areal	Expenditure
	Decares	NOK 1 000
1999	80 494	13 627
2000	78 708	13 925
2001	69 132	13 170
2002	83 263	15 409
2003	47 281	7 664
2004	57 733	10 628
2005	49 637	9 359
2006	63 270	11 937
2006		
County		
Østfold	250	59
Akershus og Oslo	1 456	252
Hedmark	33 398	5 294
Oppland	11 035	2 096
Buskerud	6 425	1 430
Vestfold	177	37
Telemark	999	225
Aust-Agder	1 961	393
Vest-Agder	1 334	416
Rogaland	30	9
Hordaland	26	21
Sogn og Fjordane	27	24
Møre og Romsdal	1 881	612
Sør-Trøndelag	3 420	858
Nord-Trøndelag	809	205
Nordland	42	9
Troms Romsa	-	-
Finnmark Finnmárku	-	-

[1] The figures only comprise work financed with forest trust fund or government subsidies.
Source: Silviculture, Statistics Norway.

3.5. Expenditure and public subsidies on silviculture[1], by county. NOK 1 000

Year County	Total amount	Of which public subsidies
2001	252 541	87 151
2002	231 397	64 836
2003	123 624	1 382
2004	166 776	28 059
2005	172 116	33 581
2006	170 339	43 159
2006		
County		
Østfold	8 764	1 657
Akershus og Oslo	10 981	1 463
Hedmark	40 710	6 311
Oppland	24 030	4 119
Buskerud	16 006	3 028
Vestfold	8 106	1 650
Telemark	10 048	2 795
Aust-Agder	6 528	2 475
Vest-Agder	4 802	2 029
Rogaland	2 917	1 453
Hordaland	1 517	918
Sogn og Fjordane	1 309	772
Møre og Romsdal	3 550	2 040
Sør-Trøndelag	8 694	3 148
Nord-Trøndelag	15 862	5 651
Nordland	4 850	2 546
Troms Romsa	1 666	1 103
Finnmark Finnmárku	-	-

[1]

4. Forest roads for motor vehicles

4.1. Introduction and history

The purpose of the statistics is to provide information at county level on the construction of forest roads. Statistics extend back to the working year 1932/33.

4.2. Users and applications

The statistics are used by public agencies (Ministries, county authorities), forest owners' organisations and research institutes. In recent years there has been increasing interest from environmental organisations.

Results from the forest roads statistics are included in the Aggregate Account for Forestry, which is compiled by Statistics Norway. The figures are also used annually in the publication Natural Resources and the Environment.

4.3. Population and publishing

In principle, the statistics cover all private forest roads for motor vehicles. Data on roads built without public subsidies are however somewhat incomplete.

The data cover roads that are finished and approved during the report year.

The figures are published annually.

4.4. Data sources and collection of data

Data on roads built with subsidies or public loans come from the Forest Trust Fund (SKAS) database.
The County Department of Agricultural Affairs keeps data on roads built without subsidies or loans manually.

The statistical data on newly built and rebuilt forest roads are collected by the Forest Trust Fund (SKAS). The Norwegian Agricultural Authority extracts data from the Forest Trust Fund database and forwards them to Statistics Norway. The County Department of Agricultural Affairs reports roads built without subsidies or loans to Statistics Norway.

4.5. Sampling

Total census.

4.6. Control and revision

If the data are unclear, the Ministry of Agriculture and Food or the County Department of Agricultural Affairs is contacted so that any errors can be corrected. After compilation, the statistics are sent to the Ministry of Agriculture and Food for additional inspection.

4.7. Estimation

Number of roads, length and expenditure are summarised and distributed by county and country.

4.8. Concepts, variables and classifications

Definitions of the main concepts and variables

Forest roads are divided into two groups, (i) *whole-year roads* and *summer roads* and (ii) *winter roads for lorries and roads for tractors*.

In accordance with the Ministry of Agriculture and Food's classification of road standards, *whole-year roads and summer roads* are included in road classes 2-5:

- *Road class 2*, main road/branch road
- *Road class 3*, whole-year agriculture road
- *Road class 4*, summer motor road (for timber lorries with trailer)
- *Road class 5*, summer motor road (for timber lorries without trailer)

Road classes 2 and 3 are roads with a carrying capacity and gradient for year-round use for timber lorries with a trailer. Road classes 4 and 5 have the same carrying capacity, but these roads have a higher gradient and are therefore approved only for summer use.

Winter roads and tractor roads are included in road classes 6-8:
- *Road class 6*, winter motor road
- *Road class 7*, heavy tractor road
- *Road class 8*, light tractor road

Timber lorries can only use road class 6 when the ground is frozen or covered with snow. Load carriers and tractors can use road class 7 all year round except in the spring when the frozen ground melts. Road class 8 is built with a lower demand for breadth, carrying capacity and gradient than road class 7.

The roads standards are further described at the following website:
http://www.skogkurs.no/vegnormaler/index.html

4.9. Sources of error and uncertainty

Measurement and processing errors

In some cases, forest roads built with public subsidies can be given retrospective approval. Adaptations to the subsidies system may also be made.

Non-response errors

Data on roads built with subsidies are assumed to be complete. Data on roads built without subsidies may not be complete because not all road projects are reported. The data collected on the building of forest roads are therefore regarded as minimum figures.

4.10. Comparability and coherence

Comparability over time and space

Initially, when the work on the statistics commenced, it was difficult to break down the data for each year. The overview of forest motor roads built before 1 July 1950 is therefore a summary of all forest roads built from the working year 1932/33 to 1 July 1950.

Coherence with other statistics

The total road area is published on the website:
http://www.ssb.no/english/subjects/01/01/

4.11. Main results

Since the beginning of the 1990s, there has been a decline in the construction and reconstruction of forest roads. However, the decline ended in 2006, when a total of 68 kilometres of new all-year roads for lorries were completed and 221 kilometres were rebuilt.

Winter and tractor roads are built to a lower standard than the all-year roads and summer roads. In total, 234 kilometres of new winter and tractor roads were built and 55 kilometres were rebuilt in 2006. Total costs for construction and reconstruction of forest roads amounted to NOK 85 million in 2006. Government subsidies accounted for NOK 30 million. The average expenditure was NOK 204 per metre of all-year roads and summer roads, and NOK 98 per metre of winter roads and tractor roads.

Although there is little construction of new forest roads, the total length of such roads in Norway is extensive. A total of 48 400 kilometres of forest road for lorries was registered at the end of 2006. In comparison, the total length of public roads in Norway is 93 000 kilometres.

The main purpose of forest roads is to provide access to forest areas and make felling and transportation of timber easier and cheaper. Consequently, the total forest road length depends on the total amount of timber in an area, and the density varies considerably from region to region. The eastern part of Norway and Aust-Agder and Trøndelag counties have between 0.6 and 1.1 kilometres of forest road per square kilometre of productive forest area. In the rest of the country, the density is between 0.1 and 0.4.

4.12. Availability

http://www.ssb.no/english/subjects/10/04/20/skogsvei_en/

More tables in StatBank

03772: Forest roads constructed and rebuilt. Whole-year roads and summer roads for lorries (C) (1999-2006)
03773: Forest roads constructed and rebuilt. Winter roads for lorries and roads for tractors (C) (1999-2006)
03771: Forest roads constructed and rebuilt. Expenditure (NOK 1 000). (C) (1999-2006)
06057: Whole-year roads for lorries. Total road length (km). (C) (2006)
05496: Forest roads constructed and rebuilt. Expenditure (NOK 1 000). (C) (2004-2006)
05498: Forest roads constructed and rebuilt. Average expenditure (NOK 1 000). (C) (2004-2006)

Storage of microdata

Microdata are stored in Statistics Norway.

4.1. Forest roads constructed and rebuilt. Number of roads and length, by county. Km

Year County	Whole-year roads and summer roads for lorries			Winter roads for lorries and roads for tractors		
	Number of roads	Length of roads newly completed	Length of roads rebuilt	Number of roads	Length of roads newly completed	Length of roads rebuilt
1991	1 132	768	683	2 936	1 861	61
1992	1 252	780	766	3 010	1 899	53
1993	865	523	641	1 934	1 328	50
1994	803	482	532	1 526	987	30
1995	778	376	436	1 466	903	43
1996	709	303	327	1 410	832	18
1997	721	284	359	1 361	745	79
1998	690	290	503	1 332	707	30
1999	656	218	432	925	575	29
2000	636	166	436	1 025	614	30
2001	511	176	434	761	470	25
2002	597	189	500	989	605	59
2003	480	130	410	703	382	63
2004	343	93	300	681	305	77
2005	270	56	202	525	230	63
2006	283	68	221	504	234	55
2006						
County						
Østfold	5	-	17	-	-	-
Akershus og Oslo	3	0	2	5	1	0
Hedmark	13	3	17	17	20	6
Oppland	45	5	37	35	19	0
Buskerud	60	21	69	37	23	5
Vestfold	11	1	5	8	2	1
Telemark	48	2	31	125	30	22
Aust-Agder	14	1	8	16	8	3
Vest-Agder	12	1	1	73	22	4
Rogaland	-	-	-	32	14	1
Hordaland	13	10	1	26	10	2
Sogn og Fjordane	12	12	1	27	16	4
Møre og Romsdal	15	6	6	19	10	0
Sør-Trøndelag	4	0	6	11	10	-
Nord-Trøndelag	13	1	16	19	12	1
Nordland	7	1	1	30	22	4
Troms Romsa	8	4	1	24	15	2
Finnmark Finnmárku	-	-	-	-	-	-
Way of financing						
With public subsidies	216	59	194	162	114	20
Without public subsidies	67	9	26	342	121	34

Source: Forest roads for motor vehicles, Statistics Norway.

4.2. Forest roads constructed and rebuilt. Expenditure, by county. NOK 1 000

Year County	Expenditure			Public subsidies
	Total	Whole-year roads and summer roads for lorries	Winter roads for lorries and roads for tractors	
1991	300 650	211 986	88 664	96 449
1992	322 932	223 232	99 700	109 704
1993	245 728	172 139	73 589	84 730
1994	214 010	156 682	57 327	79 256
1995	185 625	124 262	61 363	65 078
1996	170 399	118 041	52 358	65 681
1997	152 178	106 546	45 632	54 580
1998	178 121	133 945	44 176	67 832
1999	164 339	119 142	45 197	61 213
2000	164 211	116 028	48 183	63 553
2001	148 192	113 247	34 945	54 757
2002	184 954	136 911	48 043	68 685
2003	149 296	110 111	39 185	55 360
2004	123 044	90 584	32 460	43 178
2005	96 863	66 582	30 281	29 220
2006	84 599	58 969	25 631	29 574
2006				
County				
01 Østfold	1 551	1 551	-	541
02 Akershus/Oslo	211	159	52	40
04 Hedmark	3 101	2 426	675	684
05 Oppland	10 214	8 911	1 302	3 134
06 Buskerud	18 124	16 294	1 830	6 087
07 Vestfold	1 514	1 391	123	557
08 Telemark	6 837	4 473	2 364	1 224
09 Aust-Agder	5 419	3 904	1 516	2 130
10 Vest-Agder	4 607	1 117	3 490	667
11 Rogaland	2 280	-	2 280	476
12 Hordaland	7 138	4 936	2 203	3 220
14 Sogn og Fjordane	10 466	7 153	3 313	4 879
15 Møre og Romsdal	4 300	2 728	1 572	1 745
16 Sør-Trøndelag	886	614	273	106
17 Nord-Trøndelag	2 622	1 695	927	1 137
18 Nordland	2 818	629	2 189	1 214
19 Troms Romsa	2 512	991	1 521	1 732
20 Finnmark Finnmárku	-	-	-	-
Way of financing				
With public subsidies	72 561	55 214	17 347	29 574
Without public subsidies	12 039	4 125	7 913	.

Source: Forest roads for motor vehicles, Statistics Norway.

4.3. Average expenditure for forest road constructions[1]. 1990-2006. NOK per metre

Year	Whole-year roads and summer roads for lorries			Winter roads for lorries and roads for tractors		
	All	With public subsidies	Without public subsidies	All	With public subsidies	Without public subsidies
1990	133	144	54	45	56	24
1991	146	152	65	46	59	25
1992	144	150	55	51	62	26
1993	148	152	69	54	68	24
1994	155	162	54	56	68	27
1995	153	166	57	65	78	36
1996	187	202	72	62	80	30
1997	166	173	81	55	70	31
1998	169	179	57	60	39	34
1999	183	189	94	75	92	36
2000	193	205	67	75	96	35
2001	186	197	96	71	90	44
2002	199	208	95	72	86	47
2003	204	217	98	88	114	50
2004	230	257	86	113	54	85
2005	258	263	199	103	119	91
2006	204	218	106	89	129	54

[1] Comprise new constructions and roads rebuilt.

Source: Forest roads for motor vehicles, Statistics Norway.

4.4. Whole-year roads and summer roads for lorries. Total road length. km

County	Length
2006[1]	**48 406**
County	
01 Østfold	1 636
02 Akershus / Oslo	2 918
04 Hedmark	11 612
05 Oppland	6 951
06 Buskerud	6 144
07 Vestfold	1 241
08 Telemark	4 905
09 Aust-Agder	2 418
10 Vest-Agder	654
11 Rogaland	305
12 Hordaland	837
14 Sogn og Fjordane	572
15 Møre og Romsdal	1 075
16 Sør-Trøndelag	2 284
17 Nord-Trøndelag	3 420
18 Nordland	300
19 Troms Romsa	944
20 Finnmark Finnmárku	190

[1] By 1. January 2006.
Source: The Norwegian Mapping and Cadastre Authority.

5. Commercial roundwood removals

5.1. Introduction and history

The purpose of the statistics is to provide detailed information at municipal level on commercial roundwood removals.

The statistics date back to 1918/19, but annual figures at municipal level are available from the working year 1936/37. At that time, statistics only covered quantity cut distributed by industrial wood and wood fuel of coniferous and broad leaved species.

Since then the following changes have been made:

- *Buyer group* was included from the working year 1962/63
- *Gross value* was included from the working year 1965/66
- *The division of the assortments* has varied over the course of time. The division used today was introduced in the working year 1970/71.
- *Seller group* was included from the working year 1980/81
- From 1996 the statistics follow the calendar year
- From 2006 the statistics do not include figures on wood fuel
- From 2006 average roundwood prices per cubic metre are provided

5.2. Users and applications

The statistics are used by public authorities, research and educational institutions, professional and industrial bodies, international organisations etc. The results are also used in the Aggregate account of forestry prepared by Statistics Norway.

5.3. Population and publishing

The statistics cover all industrial roundwood for sale. The wood registered is net removals excluding rot, unusable tops, etc. The quantity cut is given in cubic metres of solid wood inside bark by assortments, seller groups and buyer groups.

Until 1995/96, the statistics followed the working year (1 August-31 July). Since 1996, the figures have referred to calendar years.

Figures on wood fuel have not been included since 2006.

The figures are published annually.

5.4. Data sources and collection of data

Until 31 December 1995, quantities cut for sale from private forests and municipal forests were reported by the municipal forest administration, and wood from common forests and State forests by their respective management. The reports were collected by the forest administration in each county and forwarded to Statistics Norway.

Since January 1996, the figures on industrial wood have been provided by the Ministry of Agriculture and Food through the Register of Timber Trade and Diverted Forest Trust Fund. The firm Skog-Data AS manages the register. The data in the register comes from the scaling of the timber sold.

The figures on wood fuel have not been included since 2006. Before 2006, figures on wood fuel were estimated by the County Department of Agricultural Affairs.

Because of the changeover from one data source to another on 1 January 1996, the statistics for the working year 1995/96 are based on both the reports by the municipal forest administration and the Register of Timber Trade and Diverted

Forest Trust Fund. Data for removals in the period 1 August to 31 December 1995 were reported on paper forms from the municipal forest administration and the management of common and State forests. Data for removals in the period 1 January to 31 July 1996 were collected electronically from Skog-Data AS. Since 1996, the data have been based on all scaled quantities of roundwood reported to Skog-Data AS. Quantities sold as stumpage are registered when the sales contract is signed.

5.5. Sampling

All quantities of roundwood cut for sale during a calendar year are scaled and reported to Skog-Data AS.

5.6. Control and revision

The data are checked in Statistics Norway with the focus on likely buyer group and likely price level for each assortment. Missing information is collected from the County Department of Agricultural Affairs. Corrections and additional payments that refer to another year are removed, if discovered.

5.7. Estimation

Roundwood quantity and gross margin are summarised per municipality, assortment, buyer and seller group. The average price per assortment is then estimated.

5.8. Confidentiality

Any statistics based on three respondents or less are not published.

5.9. Concepts, variables and classifications

Definitions of the main concepts and variables

Gross value is the value of the wood at the place of delivery to the buyer (road, watercourse, factory yard, etc.).

Industrial wood is all wood except wood fuel.

Assortments

Special timber includes poles, veneer logs, saw logs of veneer quality, and other timber of special high quality.

First class saw logs refer to saw logs classified as first class according to measurement regulations.
Second class saw logs refer to saw logs classified as second class according to measurement regulations.

Other saw logs comprise ordinary top-scaled and mid-scaled saw logs and other logs suitable for sawing, not measured in quality classes.

Unsorted saw logs and pulpwood comprise timber measured in tree length, wood sold as stumpage and other unsorted roundwood containing both saw logs and pulpwood.

Pulpwood comprises roundwood generally used in the pulp industries and the fibreboard and particle board industries. Top-scaled timber (timber suitable for sawing) used in these industries is not included.

Other roundwood comprises roundwood used for manufacture of cases and casks, pitprops and mining timber, pilings, fence wood, posts etc.

Wood fuel refers to roundwood sold for fuel.

Buyer groups

Sawmills and wood industries comprise sawmills, manufacture of cases and casks, and prefabrication of wooden houses and wooden structures.

Pulp industries include the manufacture of mechanical and chemical pulp.

Fibre and particle board industries comprise wallboard and particle board production only.

Other Norwegian buyers comprise wood preserving industries, the manufacture of wood furniture and fixtures, charcoal, wood flour, wood wool, veneer and flooring, matches, ship and boat-building as well as all other buyers not included in other groups. Until 1998, wood for export was included.

Foreign buyers include sawmills, industry or other buyers outside Norway. These buyers were included in "Other buyers" until 1998.

5.10. Standard classifications

Classification of forest owners with at last 25 decares of productive forest area by owner group
Classification of buyers and sellers of industrial roundwood
Tree species and assortment used by commercial roundwood removals

5.11. Sources of error and uncertainty

Measurement and processing errors

The statistics on industrial wood removals are thought to be quite accurate at county level. Sources of errors are corrections and additional payments registered with insufficient information.

The quantities given in the assortment "Unsorted saw logs and pulpwood" are probably too high. This is due to the fact that some of the roundwood removals are reported on paper forms where assortments are not specified. These removals are all registered as "Unsorted saw logs and pulpwood". Wood sold as stumpage is included in "Unsorted saw logs and pulpwood". Wood sold as stumpage may be harvested another year than it is sold. Since 1996, the gross value of this wood has excluded costs for cutting and hauling. These two circumstances explain the varying average prices for this assortment.

5.12. Comparability and coherence

Comparability over time and space

The breaks in the time series are explained in chapter 5.1.

Coherence with other statistics

Final results are almost equal to preliminary results at county level and country level, but can differ considerably at municipal level.

5.13. Main results

A total of 7.3 million cubic metres of industrial roundwood were cut for sale in 2006; a decrease of 12 per cent compared with 2005.

One of the reasons for the decline was difficulties in hauling out timber in the wet and warm period in November and December. In some parts of the country, heavy snowfalls in January and February resulted in lower activity. Quantities sold as stumpage are registered when a sales contract is signed. In 2005, the quantity sold as stumpage was larger than normal. This partly explains the relatively large decrease in removed quantity from 2005 to 2006.

Almost all of the decrease in quantity cut from 2005 to 2006 was due to lower activity in the heavily forested south-eastern part of Norway.

The aggregated gross value of the roundwood sold to the industry in 2006 totalled NOK 2.3 billion; a decrease of 12 per cent compared with the previous year.

On average, the forest owners obtained a price of NOK 318 per cubic metre of timber sold; the same as in 2005.

The statistics have not included figures on wood fuel since 2006.

5.14. Availability

Final results http://www.ssb.no/english/subjects/10/04/20/skogav_en/

More tables in Today's statistics

Table 1 Commercial roundwood removals. 1918-2006. 1000 m^3
Table 4 Commercial removals of industrial roundwood, by species of tree. County. 2006
Table 5 Commercial removals of industrial roundwood, spruce, by assortment. County. 2006
Table 6 Commercial removals of industrial roundwood, pine, by assortment. County. 2006
Table 7 Commercial removals of industrial roundwood, broad-leaved, and fuel wood, by assortment. County. 2006
Table 9 Commercial removals of industrial roundwood, spruce, by buyer group. County. 2006
Table 10 Commercial removals of industrial roundwood, pine, by buyer group. County. 2006
Table 11 Commercial removals of industrial roundwood, broad-leaved, by buyer group. County. 2006
Table 12 Commercial removals of industrial roundwood, by species of tree. Municipality. 2006
Table 13 Commercial removals of industrial roundwood, spruce, by assortment. Municipality. 2006
Table 14 Commercial removals of industrial roundwood, pine, by assortment. Municipality. 2006
Table 15 Commercial removals of industrial roundwood, broad-leaved, and fuel wood, by assortment. Municipality. 2006
Table 16 Commercial removals of industrial roundwood, all species of tree, by buyer group. Municipality. 2006
Table 17 Commercial removals of industrial roundwood, spruce, by buyer group. Municipality. 2006
Table 18 Commercial removals of industrial roundwood, pine, by buyer group. Municipality. 2006
Table 19 Commercial removals of industrial roundwood, broad-leaved, by buyer group. Municipality. 2006

More tables in StatBank

03895: Commercial removals of industrial roundwood, by assortment (m^3). (M) (1996-2006)
03908: Commercial removals of industrial roundwood, by species of tree and buyer group (m^3). (M) (1998-2006)
06395: Commercial removals of industrial roundwood, by species of tree and buyer group (m^3). (M) (1996-1997)
06216: Average price per cubic metre, by assortment (C) (1996-2006)
03834: Commercial roundwood (1 000 m^3) (1996-2006)
03794: Commercial roundwood removals, gross value (NOK 1 000). (M) (1996-2006)
03795: Commercial roundwood removals, by species of tree (m^3). (M) (1996-2006)
04454: Commercial roundwood removals (1 000 m^3) (1923-1924 - 1995-1996)

Storage of microdata Microdata are stored in Statistics Norway.

5.1. Commercial removals of industrial roundwood, by buyer group, species of tree and assortment. 2006. m³

	Total removals	Buyer group				
		Sawmills and wood industries	Mechanical and chemical pulp industries	Fibre and particle board industries	Other Norwegian buyers	Foreign buyers
Total removals	**7 282 477**	**3 804 334**	**2 602 409**	**107 386**	**375 360**	**392 988**
Spruce						
Total	**5 482 730**	**2 859 409**	**2 197 592**	**36 943**	**187 338**	**201 448**
Special timber	4 473	3 151	-	-	1 319	3
First class saw logs ..	327 617	322 326	-	-	3 471	1 820
Second class saw logs	177 588	176 535	-	-	674	379
Other saw logs	2 050 344	2 031 799	312	-	16 284	1 949
Unsorted saw logs and pulpwood	261 387	255 275	-	-	6 112	-
Pulpwood	2 660 739	70 323	2 197 280	36 943	158 896	197 297
Other roundwood	582	-	-	-	582	-
Pine						
Total	**1 731 641**	**939 956**	**365 914**	**70 063**	**176 297**	**179 411**
Special timber	66 006	36 367	-	-	29 639	-
First class saw logs ..	144 411	134 680	-	-	2 066	7 665
Second class saw logs	286 314	270 238	-	-	482	15 594
Other saw logs	520 152	477 857	-	-	40 975	1 320
Unsorted saw logs and pulpwood	14 005	6 162	1 100	-	6 743	-
Pulpwood	675 605	14 620	364 814	70 063	71 276	154 832
Other roundwood	25 148	32	-	-	25 116	-
Broad-leaved						
Total	**68 106**	**4 969**	**38 903**	**380**	**11 725**	**12 129**
Special timber and saw logs	4 338	3 459	77	-	802	-
Pulpwood	63 768	1 510	38 826	380	10 923	12 129

Source: Commercial roundwood removals, Statistics Norway.

5.2. Commercial removals of industrial roundwood, by seller group, species of tree and assortment. 2006. m³

	Total removals	Seller group		
		Private and muncipalities	Central government and the Educational Fund	Common forests
Total removals	**7 282 477**	**6 858 705**	**194 155**	**229 617**
Spruce				
Total	**5 482 730**	**5 187 667**	**119 636**	**175 427**
Special timber	4 473	4 470	3	-
First class saw logs ..	327 617	317 162	2 393	8 062
Second class saw logs	177 588	170 459	1 604	5 525
Other saw logs	2 050 344	1 932 699	45 395	72 250
Unsorted saw logs and pulpwood	261 387	261 387	-	-
Pulpwood	2 660 739	2 500 919	70 230	89 590
Other roundwood	582	571	11	-
Pine				
Total	**1 731 641**	**1 610 180**	**67 507**	**53 954**
Special timber	66 006	63 304	1 130	1 572
First class saw logs ..	144 411	137 266	5 446	1 699
Second class saw logs	286 314	271 512	11 403	3 399
Other saw logs	520 152	474 970	21 622	23 560
Unsorted saw logs and pulpwood	14 005	11 723	-	2 282
Pulpwood	675 605	627 096	27 262	21 247
Other roundwood	25 148	24 309	644	195
Broad-leaved				
Total	**68 106**	**60 858**	**7 012**	**236**
Special timber and saw logs	4 338	4 261	77	-
Pulpwood	63 768	56 597	6 935	236

Source: Commercial roundwood removals, Statistics Norway.

5.3. Commercial removals of industrial roundwood, by buyer group. County. 2006. m³

Nr. County	All groups	Sawmills and wood industries	Mechanical and chemical pulp industries	Fibre and particle board industries	Other Norwegian buyers	Foreign buyers
Total	**7 282 477**	**3 804 334**	**2 602 409**	**107 386**	**375 360**	**392 988**
01 Østfold	515 346	268 322	238 176	-	1 914	6 934
02 Akershus	550 127	297 392	243 737	-	4 355	4 643
03 Oslo	19 317	18 638	679	-	-	-
04 Hedmark	2 001 077	1 026 484	439 828	9 816	148 059	376 890
05 Oppland	971 876	517 831	413 316	35 440	4 952	337
06 Buskerud	860 662	462 742	388 543	-	9 377	-
07 Vestfold	259 967	124 153	135 489	-	325	-
08 Telemark	593 110	304 421	281 448	4 008	3 233	-
09 Aust-Agder	281 332	141 842	90 980	40 566	7 944	-
10 Vest-Agder	133 264	61 682	52 298	12 792	6 492	-
11 Rogaland	57 217	28 142	22 579	13	3 582	2 901
12 Hordaland	49 131	23 762	22 397	-	1 689	1 283
14 Sogn og Fjordane	49 558	30 098	17 437	-	2 023	-
15 Møre og Romsdal	60 528	44 500	7 287	-	8 741	-
16 Sør-Trøndelag	261 645	153 115	36 507	-	72 023	-
17 Nord-Trøndelag	487 679	244 704	175 525	-	67 450	-
18 Nordland	124 334	55 966	32 073	4 751	31 544	-
19 Troms Romsa	6 307	540	4 110	-	1 657	-
20 Finnmark Finnmárku	-	-	-	-	-	-

Source: Commercial roundwood removals, Statistics Norway.

5.4. Average prices on spruce, by assortment. County. 2006. NOK per m³

Nr. County	All species of tree	Spruce, total	Spruce						
			Special timber	First class saw logs	Second class saw logs	Other saw logs	Unsorted saw logs and pulpwood	Pulpwood	Other round-wood
The whole country	**318**	**320**	**461**	**459**	**371**	**412**	**333**	**227**	**361**
01 Østfold	307	317	.	462	360	402	324	234	.
02 Akershus	327	333	618	471	377	419	332	228	.
03 Oslo	341	343	.	434	360	408	.	235	.
04 Hedmark	328	327	547	463	406	428	327	218	417
05 Oppland	326	327	592	465	372	432	334	226	.
06 Buskerud	322	320	652	452	365	410	344	237	.
07 Vestfold	320	324	.	456	391	418	337	243	.
08 Telemark	295	302	674	417	393	375	250	236	.
09 Aust-Agder	301	314	668	435	369	401	319	238	.
10 Vest-Agder	295	298	.	431	367	370	376	235	300
11 Rogaland	277	273	.	408	319	357	258	181	312
12 Hordaland	266	258	.	399	313	355	279	177	.
14 Sogn og Fjordane	273	267	306	398	302	235	268	174	.
15 Møre og Romsdal	335	314	.	.	370	398	320	237	.
16 Sør-Trøndelag	328	324	542	.	359	413	356	221	.
17 Nord-Trøndelag	317	316	476	353	.	405	295	227	.
18 Nordland	298	300	445	326	348	393	326	231	305
19 Troms Romsa	219	259	.	.	.	402	335	179	.
20 FinnmarkFinnmárku	.	.	.	.	.	.	.	.	.

Source: Commercial roundwood removals, Statistics Norway.

5.5. Average prices of pine, by assortment. County. 2006. NOK per m³

Nr. County	All species of tree	Pine, total	Pine						
			Special timber	First class saw logs	Second class saw logs	Other saw logs	Unsorted saw logs and pulpwood	Pulpwood	Other roundwood
The whole country	**318**	**316**	**619**	**455**	**338**	**396**	**306**	**188**	**287**
01 Østfold	307	277	649	485	305	259	314	194	.
02 Akershus	327	308	682	469	327	391	.	197	271
03 Oslo	341	283	616	407	349	334	.	202	.
04 Hedmark	328	333	634	467	385	406	260	188	285
05 Oppland	326	317	595	480	297	397	327	177	207
06 Buskerud	322	327	602	476	325	400	350	188	738
07 Vestfold	320	323	734	499	360	371	.	186	.
08 Telemark	295	286	582	444	313	231	278	185	.
09 Aust-Agder	301	296	563	418	347	253	324	186	447
10 Vest-Agder	295	294	541	412	333	313	355	187	254
11 Rogaland	277	303	635	437	319	366	325	162	.
12 Hordaland	266	330	603	472	342	361	265	162	.
14 Sogn og Fjordane ..	273	313	623	471	330	349	330	156	378
15 Møre og Romsdal ..	335	378	619	425	366	456	327	200	.
16 Sør-Trøndelag	328	372	599	404	363	481	308	199	.
17 Nord-Trøndelag	317	340	459	476	348	431	.	199	.
18 Nordland	298	269	.	461	373	311	355	199	450
19 Troms Romsa	219	217	.	398	.	403	.	180	.
20 Finnmark Finnmárku	.	.	.	.	.	.	.	.	.

Source: Commercial roundwood removals, Statistics Norway.

5.6. Average prices of broad-leaved wood, by assortment. County. 2006. NOK per m³

Nr. County	All species of tree	Broad-leaved, total	Broad-leaved	
			Special timber and sawlogs	Pulpwood
The whole country	**318**	**214**	**415**	**200**
01 Østfold	307	249	431	208
02 Akershus	327	207	446	179
03 Oslo	341	217	.	217
04 Hedmark	328	207	342	206
05 Oppland	326	251	312	249
06 Buskerud	322	227	467	211
07 Vestfold	320	187	439	180
08 Telemark	295	189	398	183
09 Aust-Agder	301	212	443	186
10 Vest-Agder	295	243	500	185
11 Rogaland	277	300	300	.
12 Hordaland	266	314	314	314
14 Sogn og Fjordane ..	273	230	321	175
15 Møre og Romsdal ..	335	237	353	221
16 Sør-Trøndelag	328	232	335	219
17 Nord-Trøndelag	317	220	300	216
18 Nordland	298	268	255	268
19 Troms Romsa	219	213	348	194
20 Finnmark Finnmárku	.	.	.	.

Source: Commercial roundwood removals, Statistics Norway.

6. Forestry, structural statistics

6.1. Introduction and history

The purpose of these statistics is to provide an overview of both the forest properties and forestry as an industry. The statistics also provide information on age, sex, income and education of forest owners.

Since 2006, Statistics Norway has published annual statistics for all forest properties by merging data from different administrative data sources. Prior to this, statistics for all forest properties were only available based on full censuses, the last of which was in 1989.

6.2. Users and applications

The main users of the statistics are professional forestry organisations, The Ministry of Agriculture and Food and various research and educational institutions.

6.3. Population and publishing

The statistics comprise all properties in the Farm Register of the Norwegian Agricultural Authority with at least 25 decares of productive forest area. Some forest owners are represented in the Farm Register with more than one property within one municipality. In these cases, the properties owned by the same owner are merged into one property within the municipality. Thus the statistics on forest properties will include fewer units than the Farm Register. Common forests owned by the central government ("Statsallmenning") will always be counted as one single property.

In the statistics on personal forest owners, the forest owners' productive forest areas in Norway are aggregated, independent of municipality borders. Statistics on incomes are based on the forest owners' municipality for tax purposes. Other individual statistics on personal forest owners are based on the municipality where the forest owners live.

Statistics on average incomes, debt, gross property and assessed taxes are published for personal forest owners with positive entrepreneurial income from forestry. Incomes, debt, gross property and assessed taxes are published solely for personal forest owners and are aggregated for the same owners and their spouses and cohabitants.

The figures are published annually.

6.4. Data sources and collection of data

The statistics are derived from existing administrative data files.

The Farm Register of the Norwegian Agricultural Authority serves as the backbone of the statistics. The information from the Farm Register is combined with information at property level from different data sources such as the Register of Timber Trade and Diverted Trust Fund, and the Forest Trust Fund. Information on the forest owners comes from the Central Population Register, the Register on Personal Tax Returns and the Register on Tax Assessment for Personal Taxpayers.

6.5. Sampling

The statistics are derived from the whole population of forest properties.

6.6. Control and revision

The statistics are based on linked data files that were edited separately when established. The information on the productive forest area of the properties in the Farm Register is checked if errors are suspected. Examples: i) If a forest property has commercial felling and does not have a forest area. ii) If a large forest property does not have commercial felling.

6.7. Confidentiality

Figures are not presented if there is a risk of identifying any respondent.

6.8. Concepts, variables and classifications

Definitions of the main concepts and variables

Forest property: property with at least 25 decares of productive forest area. Property parcels belonging to the same owner within one municipality are treated as one property.

Personal forest owner: forest owner owning forest area as an individual owner. Forest areas owned jointly by several individuals are included for one of the owners; the reference owner.

Legal owners: central government, the Educational Fund, common forest owned by the central government ("Statsallmenning"), common forest not owned by the central government ("Bygdeallmenning"), limited company, foundation, municipality etc.

Standard classifications

County: the county of Oslo is usually merged with the county of Akershus because of the small number of properties in Oslo.
Size class: the forest properties and the aggregated forest area owned by a personal forest owner are classified by size of the productive forest area.
Age: age of the forest owner as at 31 December in the reference year.

6.9. Sources of error and uncertainty

Measurement and processing errors

The main concern is the quality of the Farm Register. The productive forest area of properties is sometimes missing or erroneous. We also believe that some small properties may be missing in the register. Furthermore, errors may arise when data are entered into the various administrative registers.

About 2-3 per cent of the quantity of commercial roundwood felled is not linked to any property in the population.

With regard to co-operative ownership, the statistics on forest owners comprise only the reference owner. Entrepreneurial income from forestry for the remaining personal owners in the co-operative is not included. In total, 3-4 per cent of the entrepreneurial income from forestry is missing.

Non-response errors

In reality, the number of personal forest owners is higher than in these statistics, because only the reference owner in a co-ownership is included. Some personal forest owners are deceased and no new owner has been registered, some live abroad or information is missing for other reasons. These owners amount to 3-4 per cent of the personal forest owners and are excluded from the statistics on incomes.

6.10. Comparability and coherence

Comparability over time and space

The statistics on forest properties are comparable with statistics from the Census of Forestry 1967 and the Censuses of Agriculture and Forestry 1979 and 1989. They are also essentially comparable with statistics from the Sample Survey of Agriculture and Forestry in the 1990s and in 2000 and 2004. The number of forest properties has fallen from 128 300 in 1967 to 116 502 in 2005. The Censuses of

Agriculture and Forestry 1979 and 1989 calculated 120 900 and 125 500 forest properties respectively. It is difficult to trace all small-sized properties without commercial felling. In some regions it is difficult to assess whether the areas are productive or not. This causes difficulties when comparing the number of forest properties over time.

Statistics are published for both forest properties and personal forest owners. The following is a brief explanation of the relationship between these units: a forest property is the forest owner's total productive forest area within a municipality. A forest owner may own forest properties in more than one municipality. Therefore the number of forest owners is less than the number of forest properties with a personal forest owner. About 113 000 forest properties with a personal owner are registered in The Farm Register. Out of the personal forest owners, almost 3 000 are deceased, living abroad or lacking information. The statistics on incomes are based on the 108 800 living personal forest owners.

Coherence with other statistics

Statistics Norway has yearly statistics on commercial roundwood removals and silviculture based on the same sources as these statistics. Linking the Farm Register with these sources makes it possible to publish figures on commercial removals and silviculture by the size of the productive forest area of the properties and the forest owners' productive forest area.

The National Forest Inventory also publishes figures on the productive forest area in Norway. The inventory estimates a productive forest area that is more than 10 per cent larger than the aggregated areas from the forest properties in The Farm Register. The National Forest Inventory estimates the area based on sample plots, and their assessment of whether the areas are productive or not sometimes differs from the forest owners' assessment.

Statistics on the farmers' income and property are provided yearly. These statistics comprise natural persons operating agricultural holdings.

Statistics Norway also presents income statistics for all self-employed persons, see http://www.ssb.no/english/subjects/05/01/ifpn_en/.

6.11. Main results

Forest properties

One in four forest properties in Buskerud cut timber for sale in 2006. The average quantity was highest in Hedmark, with 823 cubic metres per property.

According to the 2006 Farm Register, there are 117 000 forest properties with a productive forest area of 25 decares or more in Norway, of which almost 15 100 is cut timber for sale. This is 200 less than in 2005 and 8 800 less than ten years ago. Forest owners in Buskerud county were most active, with one in four properties carrying out commercial roundwood removals. Buskerud forest owners were closely followed by forest owners in Hedmark county. The activity level varied considerably between the counties. In the western part of Norway, 4-6 per cent of forest properties had commercial removals and in the northern part of the country the figure was even lower.

In 2006, average commercial roundwood removals per property was 480 cubic metres; 45 cubic metres less than in 2005 and 150 cubic metres more than ten years ago.

In 2006, the average property size was 570 decares. A total of 2 500 of the properties are owned by the government or other impersonal owners. One in four of the properties owned by a private person are owned by a woman. A total of 39 900 of the forest properties are owned by a person who also runs an agricultural holding.

In 2006, one in twenty forest properties with a productive forest area between 25 and 250 decares carried out roundwood removals. More than half of the properties with more than 2 000 decares of productive forest sold roundwood.

Personal forest owners

A total of 27 200 of Norwegian forest owners had entrepreneurial income from forestry in 2005. The average income from forestry was NOK 58 000.

There are 111 700 personal forest owners with a productive forest area of 25 decares or more in Norway. Their accumulated entrepreneurial income from forestry was NOK 1.6 billion in 2005. In addition, spouses of forest owners had NOK 220 million in income from forestry in the same year.

In 2005, the average gross income for forest owners with entrepreneurial income from forestry was NOK 540 000. Income from forestry accounted for 11 per cent of the gross income while other entrepreneurial income accounted for 23 per cent. Income from wages and salaries accounted for 28 per cent, and the remainder was made up of pensions and other income.

Personal forest owners own 81 per cent of the total productive forest area in Norway, and accounted for 83 per cent of the total commercial roundwood removals in 2005. A total of 14 400 personal forest owners sold industrial roundwood in 2005. The reason that twice as many personal forest owners have income from forestry as the number of persons with commercial removals is the Norwegian tax system. Tax is based on the average entrepreneurial income from forestry over a five-year period.

Among the forest owners with positive entrepreneurial income from forestry in 2005, forest owners from Buskerud had the highest average entrepreneurial income from forestry, with NOK 109 000. In this county, two in five forest owners had entrepreneurial income from forestry. However, Nord-Trøndelag had the highest proportion of forest owners with positive entrepreneurial income, at 46 per cent. In the three northernmost counties, only a marginal share of forest owners had entrepreneurial income from forestry. In the western part of Norway, this figure was one in ten.

Three in five forest owners with positive forest income in 2005 run their own agricultural holding. The average entrepreneurial income from agriculture was NOK 115 000.

Twenty-four per cent of the personal forest owners are women, and women made up 15 per cent of the forest owners with positive forestry income in 2005. Women own 21 per cent of the productive forest area and accounted for 22 per cent of the total quantity of industrial roundwood for sale in 2005. Women's average entrepreneurial income from forestry was NOK 7 000 higher than for male forest owners.

The education level of forest owners is slightly lower than in the population as a whole. While statistics on tertiary education show that one in four of the population had higher education in 2005, this only applied to one in five forest owners. The main reason for this difference is the high average age and the low number of young women among forest owners. Among female forest owners, the education level is the same as in the population as a whole.

One fifth of the productive forest area is not located in the municipality in which the owners live.

In Akershus, half of the forest owners live in a different municipality to where their forest properties are located.

6.12. Availability

http://www.ssb.no/english/subjects/10/04/20/stskog_en/

More tables in Today's statistics

Table 3 Forest properties with commercial roundwood removals, by county and size of property. 2006
Table 4 Commercial roundwood removals, by county and property size in decares. Solid cubic metres. 2006

More tables in StatBank

06501: Incomes, debt, gross property and assessed taxes for personal forest owners and their cohabitants and spouses (NOK 1,000). (C) (2005)
06496: Personal forest owners level of education, by county, (C) (2005)
06331: Productive forest area, by size class (decares) (2005 - 2006)
06311: Forest properties, by number of years with commercial roundwood removals (C) (1996-2005 - 1997-2006)
06312: Forest properties, by sex of forest owners and property size (2005 - 2006)
06327: Forest properties, by number of years with commercial roundwood removals and size (1996-2005 - 1997-2006)
06387: Forest properties with commercial roundwood removals, by property size (decares). (C) (2005-2006)
06307: Forest properties, by size class (decares). (C) (2005-2006)
06310: Roundwood cut for sale, by size class (m³) (2005-2006)
06506: Industrial roundwood removals, by size of productive forest area and type of owner (2005)
06314: Forest properties with individual forest owners, by the owner's sex and age (C) (2005)
06332: Forest properties with individual forest owners, by sex, age and size (2005)
06659: Tending of young forest stands and planting, by size of productive forest area (decares). (C) (2006)

Storage of microdata

Edited microdata are stored at Statistics Norway.

6.1. Forest properties[1] by county and size class. 2006

County	Total	Size class by productive forest area in decares							
		25-99	100-249	250-499	500-999	1000-1999	2000-4999	5000-19999	> 20 000
The whole country	**117 033**	**35 576**	**32 594**	**21 662**	**14 995**	**7 710**	**3 358**	**920**	**218**
County									
Østfold	5 208	1 701	1 495	936	611	309	110	40	6
Akershus og Oslo	5 228	1 860	1 411	918	583	274	110	53	19
Hedmark	10 813	3 496	2 510	1 678	1 334	855	573	282	85
Oppland	10 566	3 266	2 949	1 783	1 303	754	350	138	23
Buskerud	7 421	1 861	1 775	1 345	1 162	686	443	135	14
Vestfold	3 551	1 441	1 123	537	287	122	33	4	4
Telemark	6 411	1 480	1 400	1 229	1 068	759	384	79	12
Aust-Agder	4 252	948	935	677	660	611	375	45	1
Vest-Agder	5 187	826	1 383	1 309	1 065	506	95	3	-
Rogaland	4 375	1 693	1 302	728	424	184	43	1	-
Hordaland	8 206	2 998	2 771	1 552	689	167	24	5	-
Sogn og Fjordane	5 930	1 767	1 931	1 216	708	267	31	9	1
Møre og Romsdal	8 018	2 875	2 471	1 476	870	272	49	5	-
Sør-Trøndelag	7 255	1 869	1 850	1 529	1 189	607	179	22	10
Nord-Trøndelag	6 168	1 572	1 464	1 239	965	518	317	66	27
Nordland	10 287	3 290	3 000	2 049	1 279	495	146	22	6
Troms Romsa	7 629	2 261	2 705	1 434	796	323	95	10	5
Finnmark Finnmárku ...	528	372	119	27	2	1	1	1	5

[1] Property in The Farm Register with at least 25 decares productive forest area. A forest property includes the total productive forest area owned by one owner within a municipality.
Source: Forestry, structural statistics, Statistics Norway.

6.2. Productive forest area[1] by county and size class in decares. 2006

County	Total	Size class by productive forest area in decares							
		25-99	100-249	250-499	500-999	1000-1999	2000-4999	5000-19999	> 20 000
The whole country	**66 660 244**	**1 987 768**	**5 242 502**	**7 597 350**	**10 375 796**	**10 543 212**	**9 830 716**	**8 049 192**	**13 033 708**
County									
Østfold	2 383 956	97 036	240 439	327 751	426 505	422 049	341 051	348 158	180 967
Akershus og Oslo	3 235 928	103 774	226 912	325 607	400 705	375 847	341 537	474 002	987 544
Hedmark	12 935 231	189 156	401 778	593 482	940 750	1 187 085	1 751 917	2 664 023	5 207 040
Oppland	6 514 070	186 735	473 258	627 620	923 477	1 042 752	1 040 883	1 141 367	1 077 978
Buskerud	5 670 176	106 216	286 833	476 910	817 109	962 375	1 346 983	1 096 951	576 799
Vestfold	1 200 029	80 106	179 738	187 204	193 532	162 459	96 213	49 680	251 097
Telemark	5 049 391	82 428	228 421	442 466	754 486	1 073 902	1 099 552	655 829	712 307
Aust-Agder	3 253 316	52 777	147 060	238 514	472 099	860 956	1 094 830	350 271	36 809
Vest-Agder	2 404 501	47 143	223 693	458 418	731 355	667 668	250 031	26 193	-
Rogaland	1 209 032	90 901	211 854	252 526	288 804	244 958	114 593	5 396	-
Hordaland	1 913 266	168 053	447 187	530 298	457 022	208 706	63 088	38 912	-
Sogn og Fjordane	1 836 075	99 435	305 376	420 984	476 919	348 883	79 555	84 923	20 000
Møre og Romsdal	2 182 114	161 606	394 880	511 804	596 289	351 074	126 418	40 043	-
Sør-Trøndelag	3 630 918	107 508	305 200	543 473	823 627	826 808	490 512	190 987	342 803
Nord-Trøndelag	5 464 205	85 282	239 575	442 309	670 929	727 758	927 317	585 854	1 785 181
Nordland	4 196 510	182 020	483 056	709 480	870 103	654 027	397 111	196 926	703 787
Troms Romsa	2 707 276	128 786	429 711	500 033	530 773	424 905	266 939	84 677	341 452
Finnmark Finnmárku ...	874 250	18 806	17 531	8 471	1 312	1 000	2 186	15 000	809 944

[1] Includes properties in The Farm Register with at least 25 decares productive forest area.
Source: Forestry, structural statistics, Statistics Norway.

6.3. Forest properties[1] in combination with agricultural holding, by county and size of productive forest area. 2006

County	With agricultural holding in total	Size class by productive forest area in decares							
		25-99	100-249	250-499	500-999	1000-1999	2000-4999	5000-19999	> 20 000
The wholde country ..	**39 985**	**8 094**	**10 667**	**8 737**	**6 786**	**3 731**	**1 574**	**357**	**39**
County									
Østfold	2 445	550	720	515	381	189	68	21	1
Akershus og Oslo	2 231	552	616	498	338	154	53	16	4
Hedmark	3 408	605	760	667	586	421	250	101	18
Oppland	4 636	890	1 205	950	800	499	223	66	3
Buskerud	2 508	365	527	547	499	303	205	60	2
Vestfold	1 614	504	525	310	177	76	21	-	1
Telemark	1 574	224	266	314	326	273	139	28	4
Aust-Agder	728	75	110	112	130	159	125	17	-
Vest-Agder	1 039	83	186	250	280	210	29	1	-
Rogaland	1 912	702	571	318	211	92	18	-	-
Hordaland	2 934	729	1 046	733	334	79	11	2	-
Sogn og Fjordane	2 938	649	986	695	431	155	19	3	-
Møre og Romsdal	2 643	568	862	607	441	133	30	2	-
Sør-Trøndelag	2 893	380	647	718	664	371	104	7	2
Nord-Trøndelag	3 142	538	736	726	574	343	196	27	2
Nordland	2 021	439	482	468	401	174	51	5	1
Troms Romsa	1 205	184	378	297	212	100	32	1	1
Finnmark Finnmárku ...	114	57	44	12	1	-	-	-	-

[1] Property in The Farm Register with at least 25 decares productive forest area. A forest property includes the total productive forest area owned by one owner within a municipality.

Source: Forestry, structural statistics, Statistics Norway.

6.4. Forest owners by type of owner, county and property size. 2006

County	Forest owners in total	Individual forest owners		Impersonal forest owners	Properties of persons deceased	Unidentified owner
		Males	Females			
The wholde country...	**117 033**	**83 661**	**25 979**	**2 547**	**3 892**	**954**
County						
Østfold	5 208	3 741	1 156	156	94	61
Akershus og Oslo	5 228	3 658	1 140	265	98	67
Hedmark	10 813	7 569	2 603	232	283	126
Oppland	10 566	7 771	2 276	209	197	113
Buskerud	7 421	5 192	1 702	196	256	75
Vestfold	3 551	2 634	739	89	60	29
Telemark	6 411	4 455	1 545	143	239	29
Aust-Agder	4 252	3 068	951	71	145	17
Vest-Agder	5 187	3 689	1 170	102	210	16
Rogaland	4 375	3 332	782	137	101	23
Hordaland	8 206	6 118	1 677	150	229	32
Sogn og Fjordane	5 930	4 596	1 037	46	181	70
Møre og Romsdal	8 018	6 088	1 602	108	198	22
Sør-Trøndelag	7 255	5 481	1 429	206	116	23
Nord-Trøndelag	6 168	4 755	1 092	157	109	55
Nordland	10 287	6 537	2 749	193	694	114
Troms Romsa	7 629	4 662	2 180	71	650	66
Finnmark Finnmárku ...	528	315	149	16	32	16
Size class by productive forest area in decares						
25- 99 decares.	35 576	24 287	8 807	623	1 554	305
100- 249 decares.	32 594	23 352	7 357	455	1 176	254
250- 499 decares.	21 662	15 904	4 642	352	601	163
500- 999 decares.	14 995	11 270	2 912	350	353	110
1 000- 1 999 decares.	7 710	5 782	1 474	253	148	53
2 000- 4 999 decares.	3 358	2 439	629	212	47	31
5 000-19 999 decares.	920	572	143	170	11	24
20 000 - decares.	218	55	15	132	2	14

Source: Forestry, structural statistics, Statistics Norway.

6.5. Average incomes[1], debt, gross property and assessed taxes for personal forest owners with positive entrepreneurial income from forestry. By county, size of productive forest area, sex and age. 2005. NOK

	Forest owners with positive entrepreneurial income from forestry	Gross income, total	Debt	Gross property	Assessed tax	Wages and pensions	Wages and saleries	Total entre-prenurial income	Entre-preneurial income forestry	Entre-preneurial income agricul-ture	Other income
The whole country	**27 227**	**539 700**	**916 400**	**1 864 700**	**123 600**	**187 300**	**151 500**	**238 900**	**58 000**	**115 200**	**113 400**
County											
Østfold	2 117	535 100	1 123 900	2 149 700	125 700	210 300	169 300	213 600	41 300	110 700	111 200
Akershus and Oslo	2 397	1 120 600	1 419 200	3 483 800	205 300	250 000	202 100	434 600	95 300	164 800	436 100
Hedmark	3 496	455 600	1 077 700	1 915 600	107 900	185 900	143 800	194 800	66 600	90 200	74 900
Oppland	3 620	483 700	819 100	1 688 400	118 000	163 000	133 700	257 000	80 400	122 300	63 700
Buskerud	2 685	715 400	920 400	2 167 600	175 200	198 400	162 700	360 300	108 700	144 900	156 600
Vestfold	1 468	617 100	1 092 100	2 275 800	148 600	216 400	178 500	256 600	62 000	112 600	144 000
Telemark	1 794	468 100	645 500	1 600 800	115 600	219 600	170 300	172 500	52 800	52 700	76 000
Aust-Agder	1 056	492 200	598 700	1 507 200	111 000	215 800	169 500	138 000	44 800	53 000	138 400
Vest-Agder	866	394 200	665 500	1 193 100	97 200	208 200	160 900	135 200	29 100	60 500	50 800
Rogaland	370	445 700	922 200	1 534 700	111 000	158 800	137 300	235 200	33 200	155 100	51 600
Hordaland	758	388 000	631 600	1 174 700	94 400	169 600	147 700	172 300	22 000	111 000	46 000
Sogn og Fjordane	716	387 500	679 800	1 537 800	91 400	161 500	141 800	165 700	13 100	112 500	60 200
Møre og Romsdal	738	363 400	708 600	1 348 100	85 800	138 400	113 700	181 700	20 600	118 900	43 300
Sør-Trøndelag	1 989	419 800	676 900	1 310 000	99 600	156 500	126 800	204 100	26 500	142 300	59 200
Nord-Trøndelag	2 639	379 300	946 300	1 407 500	87 100	141 600	120 700	201 500	25 200	133 600	36 300
Nordland	478	299 600	613 000	985 400	67 300	136 300	101 100	139 200	30 900	92 100	24 100
Troms Romsa	33	404 200	759 500	1 356 400	97 200	160 200	128 400	220 100	31 100	71 600	23 900
Finnmark Finnmárku ...	6	975 200	626 000	2 005 200	237 700	353 500	329 200	259 300	97 000	0	362 200
Productive forest area											
25- 99 decares.	2 902	442 600	775 300	1 423 500	105 600	209 500	164 700	162 400	28 000	88 000	70 700
100- 249 decares.	6 078	463 800	774 400	1 504 200	112 300	202 700	164 100	187 800	28 500	110 800	73 300
250- 499 decares.	6 179	490 600	824 900	1 630 300	120 200	182 500	147 900	234 000	50 700	134 200	74 200
500- 999 decares.	5 772	471 300	861 900	1 692 700	112 700	175 000	140 000	222 200	52 900	119 600	74 100
1 000- 1 999 decares.	3 803	637 100	991 300	2 136 800	130 500	177 300	145 100	247 100	75 000	107 700	212 700
2 000- 4 999 decares.	1 922	727 500	1 376 000	2 548 000	150 600	176 600	147 800	430 100	107 600	112 900	120 800
5 000-19 999 decares.	525	1 386 600	1 964 200	5 559 200	270 600	191 200	161 800	484 400	281 800	110 200	711 000
20 000 - decares.	45	6 425 800	10 562 000	38 006 100	1 236 600	173 700	162 900	3 191 300	1 444 600	71 500	3 060 800
Age											
Below 30 years	683	390 900	1 398 600	1 332 900	83 400	177 000	176 600	190 200	68 700	79 100	23 700
30-39 years	3 695	491 600	1 392 200	1 653 000	114 400	195 400	193 800	235 100	64 000	110 900	61 000
40-49 years	7 405	610 300	1 186 200	1 926 500	135 100	193 500	189 100	301 100	67 000	140 500	115 700
50-59 years	8 048	584 400	891 700	2 037 800	144 200	189 900	176 000	275 700	60 400	136 900	118 800
60-69 years	4 819	522 300	524 400	1 888 500	114 100	174 300	95 900	185 900	49 000	97 400	162 200
70 years and above	2 576	337 600	141 000	1 547 100	68 200	176 800	3 600	63 000	30 000	23 500	97 900
Sex											
Males	23 047	559 500	980 300	1 926 800	128 200	186 400	152 000	253 500	56 900	124 800	119 500
Females	4 179	430 600	563 900	1 522 800	98 400	192 200	148 900	158 600	63 900	62 300	79 900

[1] The statistics are based on data from the registers of tax returns and assesed taxes.
Source: Forestry, structural statistics, Statistics Norway.

6.6. Income[1], debt, net property and assessed taxes for personal forest owners with at least 25 decares productive forest area. By county, size of productive forest area, sex and age. 2005. NOK 1 000.

	Forest owners	Gross income, total	Debt	Gross property	Assessed tax	Wages and pensions	Wages and saleries	Total entre-prenurial income	Entrepreneurial income forestry	Entrepreneurial income agri-culture	Other income
The whole country	**108 786**	**51 415 545**	**70 470 280**	**153 097 804**	**11 065 223**	**24 542 590**	**18 061 807**	**12 621 059**	**1 578 718**	**6 123 330**	**14 251 896**
Østfold	4 847	2 477 440	4 519 993	8 868 379	587 451	1 096 043	840 384	760 510	87 386	349 082	620 887
Akershus og Oslo	8 419	9 111 354	9 245 869	28 661 787	1 548 858	2 588 961	1 971 782	1 629 558	228 382	580 154	4 892 835
Hedmark	9 055	3 436 655	6 701 378	12 271 423	794 217	1 868 393	1 341 560	990 150	232 661	474 052	578 112
Oppland	9 249	3 617 915	5 741 320	11 642 618	861 894	1 742 718	1 324 018	1 357 202	291 096	659 324	517 994
Buskerud	6 636	5 289 824	5 924 866	13 681 367	1 031 603	1 544 765	1 202 560	1 633 925	291 866	592 572	2 111 134
Vestfold	3 561	2 138 491	3 607 516	7 348 190	468 710	879 568	691 548	572 036	91 082	254 926	686 887
Telemark	5 453	2 348 232	2 798 169	6 575 612	580 492	1 348 830	1 019 992	560 854	94 663	166 716	438 549
Aust-Agder	3 544	1 559 178	1 830 328	4 807 873	373 964	864 724	635 824	289 129	47 315	92 690	405 325
Vest-Agder	4 825	1 963 004	2 481 475	5 895 019	455 276	1 202 606	839 756	289 416	25 211	99 543	470 982
Rogaland	4 470	2 417 995	3 379 164	6 255 180	502 396	1 013 614	773 257	590 858	12 299	415 853	813 524
Hordaland	7 787	3 284 037	3 858 821	8 030 677	765 765	1 975 244	1 497 576	553 290	16 660	289 213	755 503
Sogn og Fjordane	5 336	1 811 604	2 798 289	6 128 194	419 898	1 083 995	829 233	454 444	9 405	293 457	273 165
Møre og Romsdal	7 288	2 616 032	3 747 784	7 927 601	603 617	1 584 559	1 181 322	599 588	15 195	352 754	431 884
Sør-Trøndelag	7 029	2 838 936	3 718 476	7 450 587	651 500	1 481 920	1 102 279	815 004	52 656	547 167	542 013
Nord-Trøndelag	5 721	2 044 875	4 211 644	6 466 922	463 686	1 038 992	809 186	767 523	66 443	506 103	238 359
Nordland	8 640	2 455 089	3 458 726	6 222 665	540 261	1 760 822	1 073 308	464 206	14 790	287 364	230 061
Troms Romsa	6 395	1 845 039	2 208 262	4 481 384	383 630	1 352 489	853 907	264 741	1 026	145 021	227 808
Finnmark Finnmárku	531	159 847	238 199	382 328	32 003	114 347	74 315	28 625	582	17 338	16 876
Productive forest area											
25-99 decares	32 613	13 397 409	16 893 209	34 235 551	2 948 770	5 590 467	7 867 254	2 248 702	81 183	1 083 477	3 281 453
100 - 249 decares	30 425	14 052 019	18 320 719	38 019 851	2 945 581	5 097 750	6 976 080	3 032 732	173 401	1 582 500	4 043 208
250 - 499 decares	20 448	8 864 586	12 999 604	27 743 888	2 067 769	3 267 874	4 395 806	2 639 675	313 510	1 468 602	1 829 105
500 - 999 decares	14 153	6 697 080	10 577 615	24 712 713	1 461 019	2 258 868	2 960 969	1 983 029	305 502	1 080 204	1 753 082
1 000 - 1 999 decares	7 297	4 530 610	6 100 971	14 080 613	910 324	1 185 347	1 521 839	1 288 935	285 348	576 226	1 719 836
2 000 - 4 999 decares	3 069	2 379 936	3 733 229	8 010 151	476 852	531 976	659 567	969 381	206 812	266 816	750 988
5 000 - 19 999 decares	713	1 065 973	1 298 258	3 989 585	183 214	120 001	148 899	300 658	147 957	60 627	616 416
20 000 decares and more	68	427 932	546 674	2 305 453	71 693	9 524	12 175	157 948	65 005	4 878	257 808
Age											
Below 30 years	2 608	860 457	2 797 737	2 308 504	182 353	529 481	535 668	252 965	46 903	126 551	71 824
30-39 years	11 678	5 162 719	13 233 243	14 140 622	1 171 938	2 695 159	2 728 110	1 632 468	236 380	847 914	802 140
40-49 years	23 061	12 742 989	23 124 346	38 741 591	2 888 377	5 491 617	5 653 738	4 031 790	496 046	1 984 925	3 057 461
50-59 years	29 326	16 587 479	20 242 075	45 706 419	3 734 909	6 778 617	7 382 045	4 262 324	485 781	2 041 397	4 943 110
60-69 years	22 460	9 879 155	8 135 324	30 626 609	2 128 575	2 505 393	4 903 862	1 959 038	236 253	996 093	3 016 255
70 years and older	19 683	6 199 952	2 947 322	21 595 095	959 520	74 671	3 352 736	482 472	77 354	126 451	2 364 743
Sex											
Male	83 112	43 582 872	62 214 452	131 750 631	9 442 190	14 763 063	19 538 534	11 386 088	1 311 544	5 595 474	12 658 249
Female	25 674	7 832 673	8 255 828	21 347 173	1 623 033	3 298 744	5 004 055	1 234 971	267 173	527 856	1 593 647

[1] The statistics are based on data from the registers of tax returns and assesed taxes.
Source: Forestry, structural statistics, Statistics Norway.

6.7. Productive forest area, by where the forest area of personal forest owners are situated. 2005. Decares

	In the municipality of residence	In another municipality	In another municipality, per cent
The whole country	**42 437 912**	**9 817 635**	**19**
County			
Østfold	1 746 913	303 020	15
Akershus	1 731 362	1 667 103	49
Oslo	7 960	1 404 828	99
Hedmark	6 550 166	892 285	12
Oppland	4 235 564	419 805	9
Buskerud	3 879 627	695 745	15
Vestfold	885 258	607 742	41
Telemark	3 375 594	528 630	14
Aust-Agder	2 442 235	343 792	12
Vest-Agder	1 794 488	493 286	22
Rogaland	797 400	437 371	35
Hordaland	1 536 388	287 362	16
Sogn og Fjordane	1 572 845	128 150	8
Møre og Romsdal	1 705 143	315 249	16
Sør-Trøndelag	2 842 465	347 882	11
Nord-Trøndelag	2 934 877	258 587	8
Nordland	2 590 255	404 209	13
Troms Romsa	1 769 610	254 920	13
Finnmark Finnmárku ...	39 762	27 669	41

Source: Forestry, structural statistics, Statistics Norway.