

Finland's National Forest Programme 2010 Follow-up Report 2001

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Abstract	<p>On the 18th of November 1999 the Finnish Government made the decision on the implementation of Finland's National Forest Programme 2010 as a balanced whole, comprising the economic, ecological and social dimensions of sustainability. The implementation started in the beginning of 2000.</p> <p>The implementation of the programme is monitored by means of annual follow-up reports. The second report covers the years 2000-2001. The report examines the realisation of the further measures presented in the first follow-up report of 2000 and describes the development during the period concerned, with main emphasis on 2001. The report presents proposals for 19 new further measures concerning the different aspects of the National Forest Programme 2010 and takes a look at the national projects included in the implementation and monitoring plan.</p>		
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Foreword

The revision of the forest policy during the 1990s included a reform of forest legislation, and the principles, objectives and means of the revised forest policy were put down in Finland's National Forest Programme 2010. The programme was ratified by Government Resolution of 4 March 1999 and, according to Government Decision of 18 November 1999, the programme will be implemented as a balanced whole, comprising the economic, ecological and social dimensions of sustainability. The National Forest Programme 2010 was based on Regional Forest Programmes, and updating these following the outlines set by the National Forest Programme was completed in 2001. The programmes have been prepared in the spirit of open cooperation, as it is in the interest of all parties involved to maintain the constructive atmosphere in the programme implementation, both on the national and regional level. Efficient cooperation will ensure the employment and livelihood opportunities based on forests, diversity and viability of forests as well as recreation and other amenities provided by forests to all citizens.

In the State budget for 2001 the appropriation for the promotion and control of forest management stayed close to the level reached when the implementation of the National Forest Programme 2010 started in 2000. The amounts of silviculture and forest improvement measures increased, but increasing the labour inputs takes some time. Towards the end of the year the authority to grant forest improvement funds filled up in Northern Finland. The heavy storms in November cut down at least seven million cubic metres of wood in Southern Finland, and State assistance will be needed in the reforestation of the areas which suffered the most serious damages.

The private sector has made a significant contribution to the implementation of the National Forest Programme 2010. What is particularly gratifying is that the forest industry's domestic investments increased, even if the economic situation weakened during 2001. The decline in the domestic timber trade was compensated for by the record high imports. Wood products industry and energy use of wood are developing in accordance with the objectives set in the National Forest Programme 2010.

A broadly-based committee for drafting the objective, financing and action programme for forest protection in Southern Finland, western parts of the Province of Oulu and South-western Lapland started its work in the beginning of 2001. Compared to the other countries the share of strictly protected forests is very high in Finland, but securing the biodiversity of forest ecosystems depends largely on the success in the wildlife management of commercial forests. The new recommendations and instructions for forest management, forest certification extending to the whole country as well as implementation of the forest acts will support the ecosystem management in commercial forests.

This second follow-up report of Finland's National Forest Programme was prepared at the Working Committee of the Forest Committee and ratified by the Forest Committee. The follow-up report is partly based on the project reports of the more than 30 projects included in the implementation and follow-up plan. I wish to thank all the persons and parties involved in the preparation of this report for their invaluable contributions to the job well done.

Raimo Tammilehto
Minister of Agriculture and Forestry

Finland's National Forest Programme 2010 - summary

Finland's National Forest Programme 2010 was prepared in the spirit of open and broad cooperation. A large number of interest groups were involved in the work groups preparing the programme, and almost 3,000 people participated in the public forums. The Government ratified Finland's National Forest Programme on 4 March 1999 and, according to a Government Decision of 18 November 1999, the programme will be implemented as a balanced whole, comprising the economic, ecological and social dimensions of sustainability. On 26 May 1999 the Government appointed a broadly based Forest Committee for the implementation and follow-up of the National Forest Programme 2010.

By 2010 the forest industry's annual use of domestic roundwood should be increased by 5-10 million cubic metres (to 63-68 million cubic metres), the value of wood industry's exports should be doubled to €4.2 billion per year, and the annual use of wood for energy production should be increased from 800,000 to 5 million cubic metres. The Government will cooperate with companies and entrepreneurs to secure the preconditions for forest industry operations, such as competitive energy prices and adequate road networks as well as technology and development programmes needed for the development of wood industry and the use of wood for energy.

In order to increase the production of industrial roundwood to the target level, the investments in silviculture and forest improvement need to be raised to the former level of about €0.25 billion per year. The forest owners will contribute about €67 million and the share of the State and the EU funding will be about €17 million. The Government will concentrate its efforts particularly on forest planning as well as advising and training of forest owners. The increase in the output is going to improve the employment in forestry and forest industry by 1,000-15,000 man-years, but due to the higher productivity the employment in the forestry sector is going to decrease from 95,000 to 80,000 man-years.

The ecological sustainability of forests will be ensured by developing the ecosystem management of commercial forests based on the Environmental Programme for Forestry of the Ministry of Agriculture and Forestry and Ministry of the Environment and the related follow-up. The appropriation for forest ecosystem management will be increased. The environmental load caused by forestry will be reduced in accordance with the Government Resolution regarding water protection. The ratified conservation programmes concerning privately owned land are carried out in 1996-2007 under a financing programme totalling €0.6 billion. In addition, a broadly-based ad-hoc work group will be appointed to assess the need for forest conservation based on research results, as well as to draft an objective, financial and action programme for forest conservation comprising the economic and social aspects. The programme will be launched as soon as it is completed, and it concerns Southern Finland, western parts of the Province of Oulu and Southwestern Lapland.

Principally the increase in forest management will concentrate on the tending of young stands (from 150,000 to 250,000 ha/year), first thinning (from 100,000 to 250,000 ha/year) and ditch cleaning and supplementary ditching (from 75,000 to 110,000 ha/year). In the case of forest roads the main emphasis will shift from the construction of new roads to improving the existing ones. The monitoring of the forest and environmental management and harvesting damages will be developed.

The multiple-use of forests comprises hunting, reindeer herding, picking of berries and mushrooms, landscape and cultural values, outdoor recreation and tourism, which will be taken into account and promoted in connection with the use and conservation of forests. Forestry know-how and innovative

activities will be advanced through research, practical application of the research results and training. A Forum for Innovation will be set up to increase the interaction between the producers and users of information. The interests of Finland and sustainable forestry will be promoted through active participation in international forest policy, international forest research and training cooperation as well as efficient communication of issues relating to forests and the environment.

Growth prospects in forest industry

Objectives

The aim of the National Forest Programme is to preserve competitive conditions for the forest industry in Finland and make it possible for the industry to increase its domestic consumption of wood by 5-10 million cubic metres by the year 2010. Another goal of the forest programme is to double export earnings generated by wood products by the year 2010.

Realised development

In the Follow-up Report 2000 the Forest Committee proposed the following further measures:

- 1. The Government maintains and promotes the preconditions for the wood processing industry through its policies, especially energy and traffic policy.*
- 2. The relevant operators and authorities implement the Wood Europe project and Centres of Expertise in the wood sector as well as promote the networking of companies operating in the wood sector, especially small companies located in rural areas.*

In 2000 the output of the forest industry grew by almost 5 per cent. There was growth in all the main product groups, and the production hit new records. At the turn of 2000/2001 the economic situation changed dramatically, first the growth in the production slowed down and during 2001 the volumes fell clearly. The value of forest industry's production decreased by about 7 per cent, which means that it was below the level of 1999. The production capacity increased considerably during 2001, more rapidly than the long-term trend, and thus the fall in the production volumes led to a very low utilisation rate (e.g. 88 per cent in paper and paperboard industry).

In 2000 the output of sawmilling industry hit a record of 13.3 million cubic metres, but in 2001 it fell by 5 per cent. However, the volume of 12.7 million cubic metres was still the second highest. The production of plywood also hit a record in 2000, but fell by about 3 per cent to 1.14 million cubic metres in 2001. The production of particleboard fell by about 7 per cent.

The production of pulp fell by about 6 per cent from the record high level reached the year before. In the case of chemical pulp the fall was 8 per cent and the output totalled 6.55 million tonnes. The production of mechanical pulp fell by 4 per cent, and the output was 4.6 million cubic metres.

In 2000 the output of paper and paperboard production totalled 13.5 million tonnes, but during 2001 the production fell by as much as 7 per cent, about 1 million tonnes. In the case of paper the average decrease was 6 per cent while paperboard production fell by 5.5 per cent. Of the types of paper the production of fine paper had to be cut the most, as much as 16 per cent.

As a result of the high production volumes in the wood industry, the use of wood also reached record levels in 2000 (Figure 1). Wood processing industry used 58 million cubic metres of domestic roundwood, 12.8 million cubic metres of imported roundwood, and altogether 13 million cubic metres of chips and sawdust from mechanical forest industry. Based on preliminary data, in 2001 the use wood decreased by 6 per cent, the use of roundwood totalled 67 million cubic metres and that of chips and sawdust from mechanical forest industry 12.5 million cubic metres. The capacity of forest industry grew considerably during 2001, and these investments increase the use of wood derived from the production capacity by 3.5 million cubic metres. This makes it possible to

raise the use of wood in the processing industry to the development path envisaged in the National Forest Programme when the economic situation again improves.

In 2000 the domestic investments of the forest industry totalled €1.1 billion and in 2001 they rose to €1.6 billion. Most of both the present and future investments are directed at renovating and expanding the existing plants, and the level of processing has also been raised. The resulting annual increase in the output is estimated at the average of 2 per cent and the use of wood should increase by 1.5 per cent. The value added is also going to increase.

Despite the weakening economic situation, the output in the basic wood products industry was quite high in 2001. The main reasons for the decrease were the shortage and high prices of raw material. The production of processed products of the first degree continued its rapid growth, and e.g. the production of planed timber grew by almost a fifth in 2000-2001.

The weak economic situation and decrease in the prices of many forest industry products lowered the prices for wood slightly and reduced the supply. In some parts of the country, however, the damages due to the heavy storms increased the supply towards the end of the year.

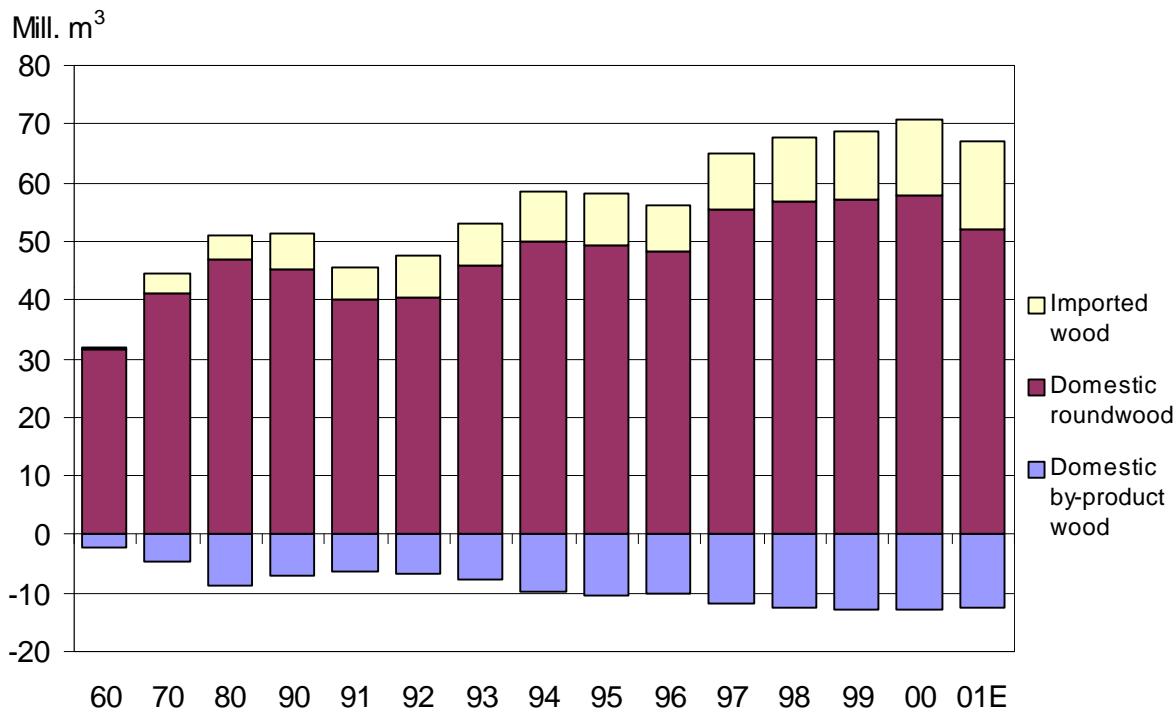
The transitional period granted for forest taxation (1993-2005) will be coming to an end in a few years. The positive development of wood trade in recent years has been partly due to the transitional period. Forest owners taxed on the basis of the area have brought a significant amount of marked stand dominated by logs to the market. When the transitional period ends, all forests owners will be taxed based on the sales income.

In Great Britain the development of the export market has been positive owing to the forest industry's sales promotion campaign Timber 2000, but in other countries the recession has reduced the demand. The active development work to promote wood building (e.g. modern wood town and public buildings made of wood) has contributed to the increase in the domestic consumption since 2000.

Further measures:

1. Decisions on energy policy influence the energy supply and competitiveness of forest industry. The discussion on nuclear power in the Finnish Parliament and the impacts of the possible decision to build more nuclear energy on the operating conditions of forest industry are followed.
2. Wood Europe campaign is continued in order to increase the value added and promote exports.
3. Studies are made concerning the impacts of the changes in the forest taxation system.

Figure 1. Use of wood raw material in forest industry in 1960-2000 and preliminary data for 2001.



Profitability and employment in forestry

Objectives

The goal of the National Forest Programme is to increase the annual harvesting of industrial roundwood to between 63 and 68 million cubic metres by the year 2010 in such a way that the high level of silviculture and ecosystem management are sustained. Another goal is to increase the use of wood for energy by 5 million cubic metres per year.

Realised development

In the Follow-up Report 2000 the Forest Committee proposed the following further measures:

1. *In order to secure the favourable development of forests, the increase in felling should primarily be targeted at first thinning and peatland, and technology should be developed to promote the utilisation of these.*
2. *The Government, especially the Ministry of Trade and Industry, will continue to encourage the increase the production of wood-based energy through its energy tax policy.*
3. *The parties in the labour market will strive to increase the attractiveness of the forest sector among young people making their career choices and develop the forest labour statistics in cooperation with the Forest Research Institute.*

4. *The area covered by regional forest planning will be raised to about one million ha per year according to the goal set in the National Forest Programme 2010. During the programme period the area covered by the plans should increase to 75 per cent of the surface area of private forests.*
5. *The section on forestry in the Rural Policy Programme will be implemented according to the outlines set by the Government.*

In 2000 the gross stumpage earnings of private forestry were about €1.6 billion, but in 2001 they fell to €1.5. The last time the gross stumpage earnings of private forestry were this low was in 1996. In 2002 the earnings are expected to stay on about the same level as in 2001.

The total costs of wood production in private forests and related administration accounted for about 16 per cent of the gross stumpage price earnings in 2000, and the costs are expected to increase in 2001 and 2002. There is considerable regional variation: in Southern Finland the share of costs in the gross earnings may be only 11 per cent, but in Northern Finland they may account for as much as 35 per cent of the gross stumpage earnings.

In 2000 the average net earnings of private forestry before taxes and liabilities were €107 per hectare of forestland. Because of the decrease in commercial felling and the prices for logs, in 2001 the earnings fell to about €91, which is only 85 per cent of the peak year 1998. Regional variation is great in the net earnings as well, ranging from €198 per hectare of forestland in the territory of Häme-Uusimaa Forestry Centre to €20/ha in Lapland.

Logs, especially those of spruce, are the most significant element in the accrual of stumpage earnings. In Southern Finland logs account for three-quarters and in Northern Finland for almost three-fifths of the earnings of private forestry.

The majority of forest owners live in the rural areas, while urban forest owners living in population centres with more than 20,000 inhabitants own 21 per cent of the forest holdings and 16 per cent of the forest area. This means that the decrease in the earnings from wood sales affects the financial situation and economic activities of the rural population and communities the most.

Table 1. Commercial roundwood production by forest ownership category and wood imports in 1998-2000 as well as forecast for 2001 (million m³). Source: Finnish Statistical Yearbook of Forestry and Finnish Forest Sector Economic Outlook 2001-2002.

	1998	1999	2000	2001e
Commercial felling, total	55.1	55.3	55.9	52.5
- logs	27.7	27.3	28.3	26.1
- pulpwood	27.3	28.0	27.6	26.4
- non-industrial private	48.9	47.8	48.0	44.4
- forest companies	2.1	3.1	3.3	3.5
- Forest and Park Service	4.1	4.4	4.6	4.6
Roundwood imports	12.0	13.2	12.6	15.0

In nominal terms the stumpage price level was 5.5 per cent higher in 2000 than the year before. However, in real terms the stumpage price level in the whole country fell by 2.4 per cent from 1999 due to inflation. In 1996-1999 the stumpage price level rose in real terms as well, and thus the year 2000 deviated clearly from the trend. In 2001 the real stumpage price index was about 4 per cent

lower than in 2000. Except for birch logs the price of all types of timber fell, and the pulpwood prices decreased the most.

Roundwood production totalled 61.5 million cubic metres in 2000. Commercial felling accounted for about 91 per cent of this, i.e. 55.9 million cubic metres. About 4.7 million cubic metres of stemwood was cut to be used as firewood in buildings. Commercial felling from private forests totalled 48.0 million cubic metres (Table 1), 3.3 million cubic metres were harvested from forests owned by forest companies and 4.6 million cubic metres came from State forests governed by the Forest and Park Service.

Commercial felling in 2000 included 28.3 million cubic metres of logs and 27.6 million cubic metres of pulpwood. The log volumes grew by 4 per cent from the year before, while the amount of pulpwood fell by one per cent. In 2001 market felling decreased by about 6 per cent to 52.5 million cubic metres, as the felling of logs decreased by 8 per cent and that of pulpwood by 4 per cent. Felling in private forests decreased as much as 15 per cent from the year before due to the uncertainty of the economic situation and fall in wood prices in summer 2001.

According to an estimate by the Finnish Forest Research Institute for the different Forestry Centres, the maximum sustainable cut of roundwood is 69 million cubic metres per year. In 1998-2000 the total roundwood production for the processing industry in the whole country was, on average, 58 million cubic metres. Based on preliminary data the procurement and use of wood fell slightly in 2001. The felling of spruce has increased considerably in recent years. The wood resources would have allowed much higher felling volumes, even exceeding the total allowable cut, which is partly justified by the forest management measures especially in the case of spruce in Southern Finland. The forest industry has imported pulpwood and especially birch pulp to be used as raw material in the pulp and paper industry. One new element in wood trade has been the increase in the import of logs. In 2000 wood imports totalled 12.6 million cubic metres and in 2001 imports totalled 15 million cubic metres, which is an all-time record. The share of logs in wood imports rose to 20 per cent.

The first discussions on amending the Directive relating to the quality of petrol and diesel fuels were held at the European Parliament in November 2001. The objective is that by 2008 sulphur content in the fuel used in moving forest machinery and farm tractors should not exceed 10 mg/kg. According to the proposal, the agricultural and forestry entrepreneurs and machine contractors can be compensated for the costs due to the amendment.

Use of wood for energy

In 2000 the energy consumption in Finland totalled 1,308 petajoules, and wood fuels accounted for 20.7 per cent of this (Figure 2). Most of the solid wood fuel, 62 per cent, is bark, and the share of forest chips is 7 per cent. Of the various sources of forest chips logging waste accounts for 47 per cent.

In 2000 about 0.8 million cubic metres, i.e. 1.5 TWh, of forest chips were used for the production of energy and heat in Finland. In addition to this, 0.14 cubic metres of chips were used for heating in small buildings, and thus the total use amounted to 0.93 million cubic metres (Table 2). Almost half of this was used in the Province of Western Finland, where two-thirds of the chip power plant capacity to be built in the next few years are also located. According to the Technology Programme for Wood Energy, the use of forest chips should be 2.5 million cubic metres by 2003, and the

objective set in the Programme for Promoting Renewable Energy Sources is 5 million cubic metres by 2010. The objectives can be met by using peat to complement the use of energy wood as fuel.

According to the Pellervo Economic Research Institute, 50-60 per cent of forest owners are interested in supplying energy wood, i.e. smallwood and logging waste. There is considerable regional variation in the potential supply of energy wood, and thus the development of the energy wood market is also going to be different in the different parts of the country. Most of the forest owners consider that some kind of “stumpage price” should be paid in addition to the harvesting costs. However, the markets of energy wood are closely linked to the markets of industrial wood: the possible harvesting of energy wood is agreed in connection with the sale of industrial wood and for the time being most of the energy wood is harvested from terminal cutting areas.

Figure 2. Total energy consumption according to sources of energy in Finland in 1999-2000.
Source: Statistics Finland

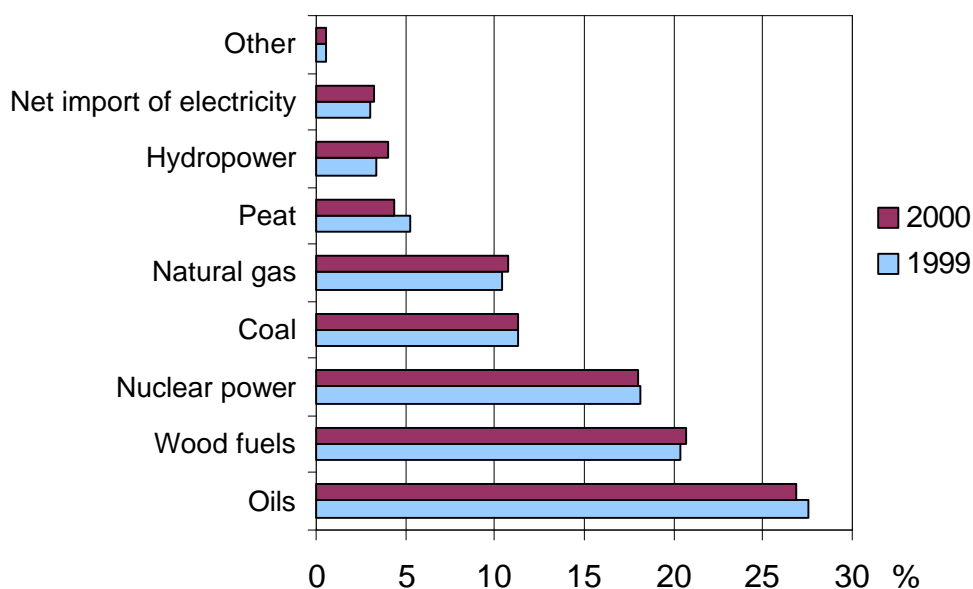


Table 2. Total use of forest chips in 1999-2000. Source: Ministry of Trade and Industry

Use / user	Solid volume 1 000 m ³	Solid volume Share, %	Energy content GWh	Number of users
Energy and heat production	790	85	1 516	249
- forest industry	228	24	422	13
- Other producers	514	55	998	126
- Heat entrepreneurs	48	5	96	110
Small buildings	142	15	284	-
Total in 2000	932	100	1 800	249
Use of forest chips in 1999	747			

Development of employment

In 2000 forestry employed about 28,000 persons in Finland (Table 3). In 2001-2002 the total employment in forestry is forecast to stay on about the same level as in 2000, even if the commercial felling has been on the decrease. The labour input of wage earners totalled about 12,000 man-years, and the labour input of salaried employees was about 6,000 man-years.

Unemployment in the forestry sector fell to 11 per cent during 2000, and in 2001-2002 the decrease is expected to continue close to the average rate of 10 per cent in the other sectors.

The growth in forestry employment was due to the increase in the labour input of entrepreneurs to 4,000 man-years, while the number of salaried employees was about the same as before. In 2001 the labour input by entrepreneurs seems to have increased by about 1,000 man-years, but the number of salaried employees is on the decrease. In 2000 the labour input of forest owners totalled about 5,000 man-years, and this is expected to stay at about the same level.

According to the commercial felling and employment statistics of the Finnish Forest Research Institute, in the early part of 2001 1,800 harvesting machines, 2,000 forest tractors and 1,600 logging trucks were used in the harvesting and transport of wood. In 2001-2002 1,000 entrepreneurs and 2,000 drivers are engaged in the road transportation of wood, there are 1,300 forest machine entrepreneurs and 700 forest improvement entrepreneurs, and 3,500 machine operators engage in forest machine work. The manual labour input totals 4,000 man-years, of which forest workers account for 1,500 man-years and cutting by forest owners for 2,500 man-years. Forest owners account for 5,000 man-years and entrepreneurs 4,500 man-years of the labour input into the management of forest ecosystems.

Table 3. Total labour input of forestry according to occupational status in 1999-2000 and forecast for 2001-2002. Source: Finnish Forest Research Institute.

	1999	2000	2001e	2002e
Employees total	19 000	19 000	18 000	18 000
- salaried employees	7 000	7 000	6 000	6 000
- wage earners	12 000	12 000	12 000	12 000
Entrepreneurs total	8 000	9 000	10 000	10 000
- forest owners	5 000	5 000	5 000	5 000
- other entrepreneurs	3 000	4 000	5 000	5 000
Total employment	27 000	28 000	28 000	28 000

Further measures:

1. Use, harvesting and statistics of energy wood are developed to make them correspond to the statistics on industrial wood markets.
2. Working conditions in the forest sector are developed to reinforce the attractiveness of the sector as well as the working capacity of wage earners, salaried employees and entrepreneurs.
3. Attention is directed at the development of the profitability of forestry, especially the harvesting of wood and the required logging volumes as recommended in the National Forest Programme 2010.

Ecological sustainability

Objectives

The aim of the National Forest Programme is to achieve and preserve a favourable standard of conservation of species and habitats in the forests by a combination of conservation areas and ecosystem management in commercial forests.

Realised development

In the Follow-up Report 2000 the Forest Committee proposed the following further measures:

1. *Nature conservation programmes will be implemented by 2007 according to the financial programme for conservation programmes ratified by the Cabinet Committee on Economic Policy.*
2. *Efforts will be made to raise the financing for the management of conservation areas at least to the level proposed in the National Forest Programme 2010. The proposed € 16 million should be reached by 2003.*
3. *The Committee for the conservation of forests in Southern Finland appointed in December 2000 will draft a proposal for a target, financing and action programme for forest conservation in Southern Finland, western parts of the Province of Oulu and South-western Lapland by the end of June 2002.*
4. *The results achieved through the ecosystem management measures will be examined, including, for example, how well the key habitats and other valuable habitats to be preserved support the preservation of endangered species in commercial forests.*
5. *Adequate funding for forest ecosystem management will be ensured. The marketing of ecosystem management and use of environmental support to forest owners will be intensified, especially in connection with advising and forest planning.*

Nature conservation programmes ratified by the Government have been implemented in accordance with the financial programme approved by the Cabinet Committee on Economic Policy in 1996 (Figure 2 and Table 2).

In the State budget the appropriation for the management of the nature conservation areas for the year 2001 was raised from €12.6 million to €14 million. In 2002 the funding allocated to the Forest and Park Service by the Ministry of the Environment totals €14.2 million. In the beginning of 2002 conservation areas were transferred from the Finnish Forest Research Institute to the Forest and Park Service, which has weakened the funding situation relative to the duties involved. In 2003-2004 the appropriation should be increased by about €4 million to ensure the appropriate management of the tasks.

The Finnish proposal concerning the Natura 2000 conservation areas includes 1,458 sites referred to in the Habitats and Bird Directives of the European Union, with a total surface area of 4.8 million hectares. 97 per cent of the land areas concerned are included in the existing nature conservation programmes or reserved for nature conservation. The Supreme Administrative Court ratified the main elements of Government's Natura 2000 proposal in summer 2000.

Based on demands put forward by the European Commission and a decision of the ministerial work group in 2000 it was proposed that the Natura 2000 Network be complemented by 295 new sites, with a surface area of about 11,200 hectares. The Government made a decision on supplementing the proposed Natura 2000 Network in spring 2002, and the Commission makes the decision on the approval of the proposal according to the original schedule in 2004. The Finnish Natura 2000 Programme and its drafting process are being examined by the Chancellor of Justice.

In the context of the implementation of the National Forest Programme 2010, in December 2000 the Government appointed a committee to draft a proposal for an objective, financing and action programme for forest protection in Southern Finland, western parts of the Province of Oulu and South-western Lapland. The proposals of the so-called METSO committee (committee for forest conservation in Southern Finland) may not cause any costs to the State economy prior to 2008. The term of the committee ended on 30 June 2002. In connection with the committee there were work groups to examine the research needs, development of appropriate means, and methods and criteria for the assessment of the ecological, economic and social impacts related to conservation. The work of the committee was based e.g. on the report of the work group for need for forest conservation in Southern Finland and Ostrobothnia (ESSU), and significant contributions were made by the expert group for the restoration of forest and peatland of the Ministry of the Environment as well as the work group for the harmonisation of the classification and statistics related to forest conservation and the project concerning the basic information on forest conservation of the Ministry of Agriculture and Forestry.

The new list of the work group for the follow-up of threatened species in Finland was published in autumn 2001. Due to lack of information a little over a half of the 43,000 species of living organisms living in Finland had to be excluded from the assessment. Of the 15,000 species for which there is adequate data available every tenth species was estimated to be threatened. The endangerment of forest species seems to have slowed down during the 1990s, but the closing of cultural biotopes is still a major cause of endangerment. Critical factors in terms of the forest species include the shortage of decaying wood as well as old deciduous stands, especially aspen. The follow-up group proposed 19 measures to remedy the shortcomings in the research, monitoring, protection and management of threatened species.

The Finnish Association for Nature Conservation presented a divergent view of the follow-up report, according to which the implementation of the National Forest programme 2000 as a balanced whole as envisaged by the Government is impossible due to the restriction that the

proposals of the METSO committee concerning forest conservation in Southern Finland may not cause any costs to the State economy prior to 2008. If the efforts concerning the ecologically sustainable use of forests are started as late as 2008, the National Forest Programme 2010 is seriously unbalanced, concentrating only on promoting intensive forestry. The Association for Nature Conservation also points out that the view of forestry and its indirect impacts as a cause of endangerment is misleading and underestimates the real impacts, and the results are not compatible with those presented in the report of the second work group for the follow-up of threatened species.

Table 4. State of implementation of conservation programmes and other decisions on 1 January 2002. Source: Ministry of the Environment

	Established		Private conservation areas	Not yet established		Total surface area ha
	Statutory conservation areas ha			State land ha	Private land ha	
	land	water				
National parks*	726 500	81 400	-	7 130	4 700	819 730
Strict nature reserves*	150 100	3 000	-	0	0	153 100
Mire conservation area	423 700	11 300	7 960	154 600	40 400	637 960
Bird wetlands**			7 200	6 340	52 600	66 140
Shoreline protection area			14 140	84 200	43 000	141 340
Herb-rich forest area	1 290	10	1 540	2 000	1 800	6 640
Old-growth natural forests	10 500	200	1 530	330 970	4 000	347 200
Other conservation area***	40 900	27 300	-	-	-	68 200
Private conservation area			17 020	-	-	17 020
Private water area			41 440			41 440
Wilderness area	1 379 000	110 000	-	-	-	1 489 000
Natura 2000, new sites			1 870	50 000	26 500	78 370
Total	2 731 990	233 210	92 700	635 240	173 000	3 866 140

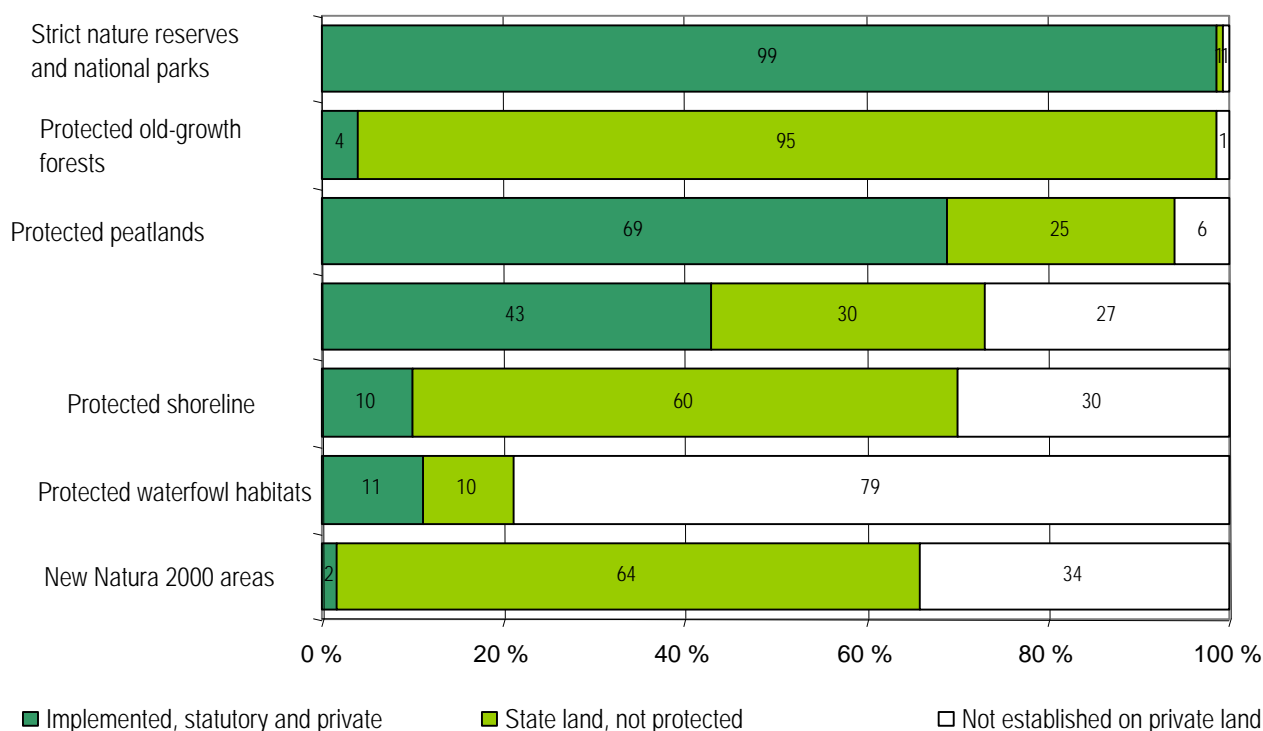
* Development programme for national parks and strict nature reserves as well as subsequent Government decisions concerning the establishment or enlargement of national parks. The conservation programme for glacial fluvial esker formations (about 94,000 ha) is not included, because this is implemented mainly on the basis of the Soil Type Act and Decree. For the part of the Natura 2000 Network the table includes the land areas referred to in the Nature Conservation Act which were protected by the decision. In other respects the network areas coincide with those included in other conservation programmes.

** New Natura sites implemented under the Nature Conservation Act

*** Protection areas for seals

Most of the surface area not yet established is land; bird wetlands include waters as well.

Figure 3. Degree of implementation of the conservation programmes on 1 January 2002. Source: Ministry of the Environment.



Ecosystem management in commercial forests

The survey of habitats of special importance referred to in the Forest Act and habitats protected under the Nature Conservation Act and other valuable habitats has continued. By the end of 2000 the surveys of habitats of special importance and other valuable habitats conducted by Forest Centres covered 64 per cent of the private forests. In 2001 special surveys were made on 33,257 sites with the total surface area of 1,554,373 ha. Altogether 9,653 habitats listed in the Forest Act and 5,104 other valuable habitats were found. It is estimated that most of this work will be completed in 2003. Forest companies have conducted similar surveys on their own lands, and the Forest and Park Service has conducted surveys on the State lands it governs in connection with forest ecology planning.

The Finnish Environment Institute has coordinated the survey of biotopes protected under the Nature Conservation Act at the Regional Environment Centres. Inventories made in 1998-2000 cover about 1,100 potential sites, of which about 510 meet the criteria set out in the Nature Conservation Act. Most of these biotopes are located on private lands. The average surface area of these sites is more than 2 hectares, but in the case of forest biotopes the areas are smaller. In 2001 about 150 biotopes were found, most of these in forests. The number of decisions concerning the definition of biotopes was 66 (110 ha).

In the beginning of 2001 the Forest and Park Service completed the extensive planning of natural resources, with a number of different objectives. This resulted in 7 natural resources plans, which provide the framework for long-term planning of the use of natural resources. The aim is to secure

sustainability in a holistic way, where the nature, economy and human welfare are taken into account in a balanced way. The natural resources plans were drafted in broad and open cooperation between the relevant interest groups and local people.

By the end of 2000 the number of landscape ecological plans aimed at securing biological diversity in commercial forests totalled 112, and they covered all forests governed by the Forest and Park Service. Like the natural resources planning, the landscape ecological planning is also based on broad and open participation. The plans include a survey of the nature values and ways of preserving these. Decisions concerning protection based on the landscape ecological plans of the Forest and Park Service cover altogether 129,000 hectares of forestland, which corresponds to a major statutory conservation programme. 205,000 hectares of commercial and recreational forests were designated for limited utilisation in forestry. These measures reduce the roundwood production from commercial forests by 12 per cent and the revenues of forestry by more than €15 million. The costs of the planning totalled €7.6 million in 1996-2001.

An international evaluation and summary report on the landscape ecological planning was completed in 2001. According to this, the regional ecology planning method of the Forest and Park Service is a major step towards ecologically, economically, socially and culturally more sustainable forestry. However, priority is given to ecological sustainability, while less attention is directed at the other dimensions of sustainability in forestry. The planning method stresses the conservation of natural, stable habitats and the species living in these, and not enough emphasis is given to succession habitats, such as habitats created by forest fires and uneven-structured forests dominated by pine. According to the planning instructions, the share of old-growth forests should be adequate in the long term (4-10 per cent depending on the frequency of fires). On average this objective is met, as the share of old-growth forests in the areas covered by planning is about 12 per cent. A development and updating project of both the natural resources planning and landscape ecological planning was started at the end of 2001.

In accordance with the objectives of the National Forest Programme 2010, an appropriation of €4.2 million for promoting the forest ecosystem management was included in the State budget for 2000. The appropriations for environmental support and ecosystem management projects and for the survey of key habitats based on the Forest Act were both raised by €0.84 million. In 2001 environmental support payments totalled €1.5 million, the number of contracts was 223 and the area covered was 1,300 ha (Table 5). €0.61 million were used for regional ecosystem management projects and €2.2 million for the survey of key habitats.

The instructions for water protection measures, such as the riparian zones to be left when taking silvicultural measures, are included in the forestry recommendations and instructions of various organisations. The results from the monitoring of the standard of ecosystem management in commercial forests show that in most cases the filter strips or riparian zones with trees left in connection with felling are wide enough, but further measures are needed in the case of small waters such as brooks and springs. Studies on water protection measures and impacts of forestry on waters are underway, and there are preliminary results available on e.g. the impacts of ditch cleaning and supplementary ditching and fertilisation on the quality of the run-off water. Further studies are needed especially on the impacts of soil preparation.

By the beginning of 2001 95 per cent of the Finnish forestry land (forest, waste and scrubland), altogether 24.8 million ha, had been certified under the FFCS (Finnish Forest Certification System), and in 1999 and 2000 independent certification companies granted altogether 13 regional forest certificates. In May 2000 the FFCS won the approval of the PEFC (Pan European Certification

System). In autumn 2001 the Finnish FSC work group drafted a national FSC standard, and the FSC certification was started in the Finnish private forests in autumn 2001 (92 ha).

Table 5. Amount of environmental support, number of contracts and the area covered.

	1999	2000	2001
Environmental support (mill. €)	0.76	1.4	1.5
Number of contracts	74	132	223
Total surface area (ha)	250	1 584	1 300

Ecosystem management in commercial forests is monitored annually on the lands of all forest owner categories. Monitoring provides valuable data on the occurrence of valuable biotopes and their conservation in harvesting, the stands to be preserved due to biological diversity, water protection, soil preparation and landscape management standard as well as the costs of ecosystem management. Based on the results of 2001 the level of ecosystem management in harvesting and forest regeneration has become established at quite a good level.

Development is still needed for the part of patches of herb-rich forests, small wetlands, seepage areas, springs and brooks and their surroundings. Forest ecosystem management calls for more careful targeting of the reserved stands in regeneration areas. Steady improvement has occurred in water protection during the monitoring period 1995-2001.

Forests and climate policy

The amount of carbon assimilated into the Finnish forests increased slightly during the 1990s. In 1990-2000 the carbon balance varied between 10 and 38 million CO₂ tonnes. In 2000 the carbon balance was 12 million CO₂ tonnes (growth of the stand 103 million and drain 91 million CO₂ tonnes). Greenhouse gas emissions varied between 71 and 81 million CO₂ tonnes.

In March 2001 the Government submitted a report on the National Climate Strategy to the Finnish parliament. Climate Strategy includes the outlines, objectives and measures which are needed to realise the national objectives based on the distribution of the EU contribution to meeting the commitments set out in the Kyoto Protocol. The main elements of the National Climate Strategy are the extension of the energy saving programme, implementation of the programme to promote sustainable energy sources, restricting the use of coal by increasing the use of natural gas or building more nuclear power as well as extending the measures to reduce emissions to traffic, the building sector, community planning, agriculture and forestry and waste management. The climate strategy also includes a proposal to launch a specific research programme on peat.

According to the National Climate Strategy, forestry may influence the climate change and carbon balance in three ways:

- 1) by protecting and increasing the existing carbon sinks and reservoirs (sustainable harvesting),
- 2) by establishing new carbon sinks and reservoirs (e.g. afforestation of arable land) and
- 3) by substituting fossil energy, raw materials and products by renewable biomass (e.g. increasing the use of wood for energy, promoting wood building and use of wood in other products).

More detailed provisions on the realisation of the Kyoto Protocol are given by decisions of the Conferences of the Parties to the Convention on Climate Change. The seventh session of the Conference of the Parties held in Marrakech in October-November 2001 decided to recommend the approval of the implementation rules of the Kyoto Protocol. These concern the Kyoto mechanisms,

carbon sinks, control of the compliance as well as reporting and monitoring. The agreement on the financing of climate measures in the developing countries reached in Bonn was ratified at the Marrakech Conference.

Further measures:

1. Development of biological diversity of forests in Southern Finland is continued based on the work of the committee on forest biodiversity in Southern Finland.
2. Water protection in forestry is developed in a way envisaged in the target programme for water protection 2005 and Water Framework Directive of the European Union. In particular, ditch cleaning and supplementary ditching and soil preparation are planned and realised so that the burden on waters is minimised. In the protection of groundwater measures are targeted at the particularly important areas according to the national inventory of groundwater resources as well as other groundwater areas suitable for the provision of water.
3. Environmental support will be reallocated from the survey of habitats of special importance referred to in the Forest Act to ecosystem management projects as of 2004.

Forest management

Objectives

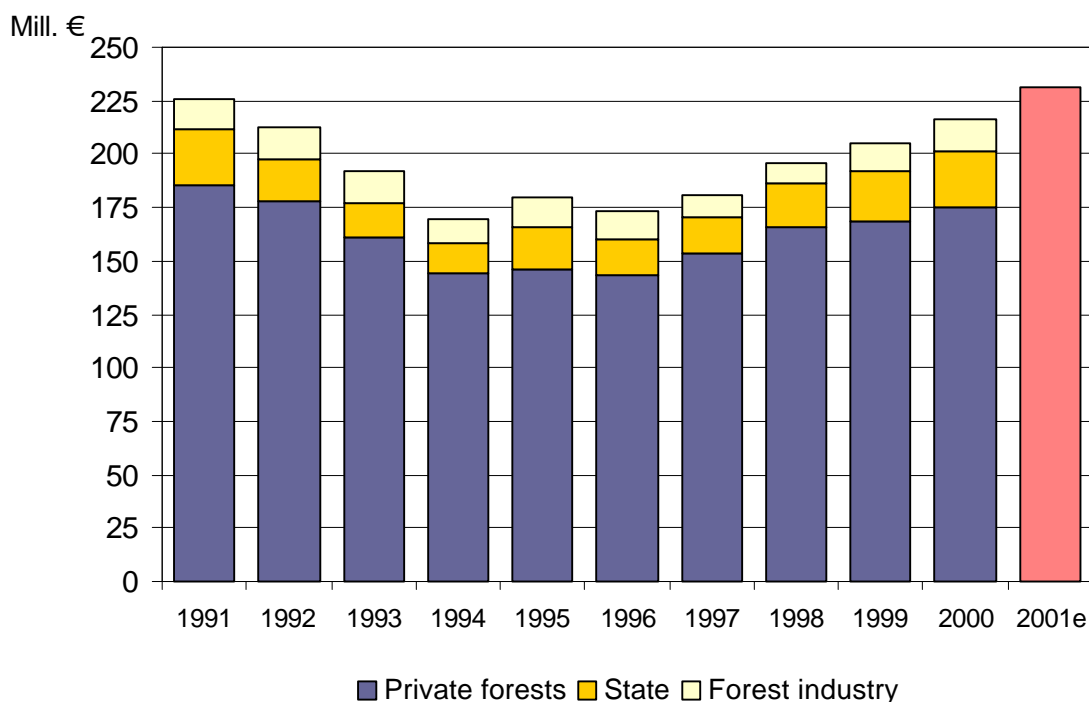
The aim of the National Forest Programme is to take care of silviculture and forest improvement work to the effect that the production of industrial roundwood, which will rise to 63-68 million cubic metres per year, will stand on a sustainable base. In order to achieve this, the total investments in wood production need to be raised to the earlier level of about €0.25 billion per year.

Realised development

In the Follow-up Report 2000 the Forest Committee proposed the following further measures:

1. *Forestry Centres and Forest Management Associations together with the wood buyers market the silvicultural and forest improvement measures to forest owners. Marketing will be intensified through the Tomorrow's Forests campaign. The Ministry of Agriculture and Forestry monitors the progress of measures based on the Act on the Financing of Sustainable Forestry and tries to remove obstacles to the increase in the amount of accomplished work.*
2. *The actors involved in forestry adopt the revised recommendations and instructions for silviculture, taking into account the objectives for economically, ecologically and socially sustainable use of forests set in the National Forest Programme 2010.*
3. *Together with the other actors involved in forestry, the Finnish Forest Research Institute develops the statistics on silvicultural and forest ecosystem management measures and forest improvement.*

Figure 4. Total costs of silvicultural and forest improvement work in 1990-2000 and forecast for 2001. Source: Forest Statistics Information Service.



In 2001 the costs of silvicultural and forest improvement work totalled about €231 million, which is 5 per cent higher than in 2000, when they were €220 million (Figure 4). Investments are already close to the target level of €250 million.

The State share in the management costs of private forests fell until 1996-97, when the provisions on forest improvement were revised (Figure 5). Since then the State contribution has grown. In 2000 altogether €74 million were used for silvicultural and forest improvement measures in private forests, of which €126 million came from the forest owners and €48 million was State assistance. In 2001 the State contributed €57 million to silviculture in private forests.

The information basis of the use of labour and costs of silvicultural and forest improvement in private forests has weakened in recent years. The situation is going to improve in 2002, when the model designed by a work group of the Ministry of Agriculture and Forestry is introduced. It will also be applied to the statistics of 2001 as far as possible.

The tending of young stands, harvesting of wood for energy and road constructions came the closest to meeting the objectives of the work programme based on the Act on the Financing of Sustainable Forestry. Objectives were not reached in ditch cleaning and supplementary ditching and seeding and planting.

The amendments to the Act and Decree on the Financing of Sustainable Forestry prepared by the Ministry of Agriculture and Forestry on the basis of proposals made by the forest organisations entered into force in 2001. Funds for securing sustainable wood production may now be allocated for the tending of young stands and harvesting of energy wood as an employment measure, and part of the labour cost for preventing *annosus* root rot is covered by State support. Basic road

improvement was extended to cover roads other than private roads constructed by means of forest improvement funds.

Figure 5. Cost structure of silvicultural and forest improvement work in private forests in 1991-2000. Source: Forest Statistics Information Service.

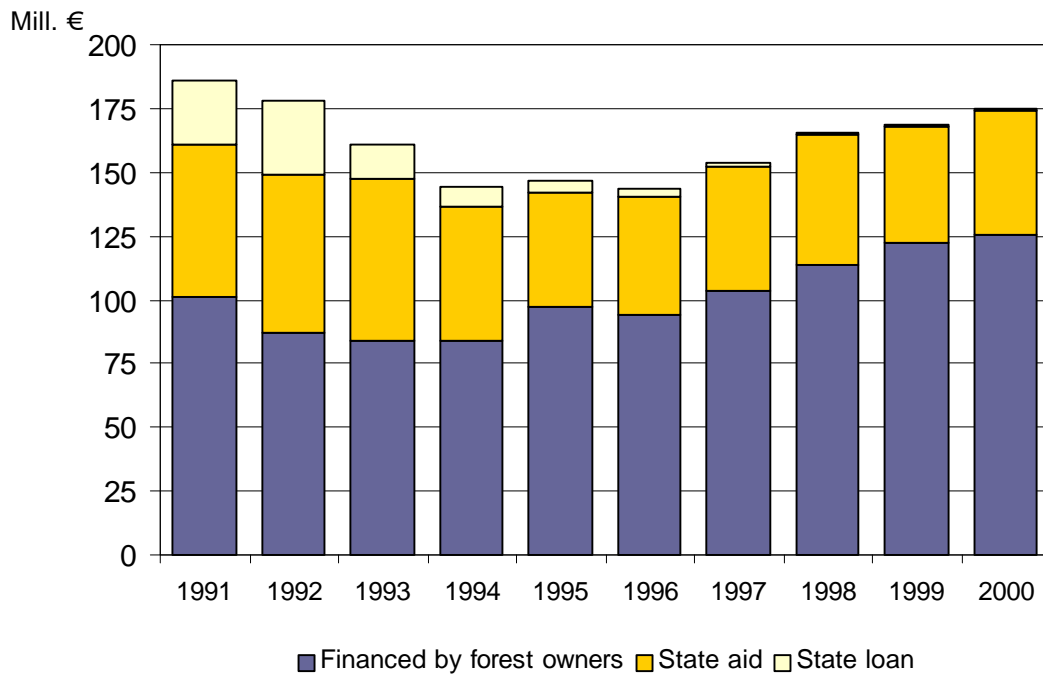
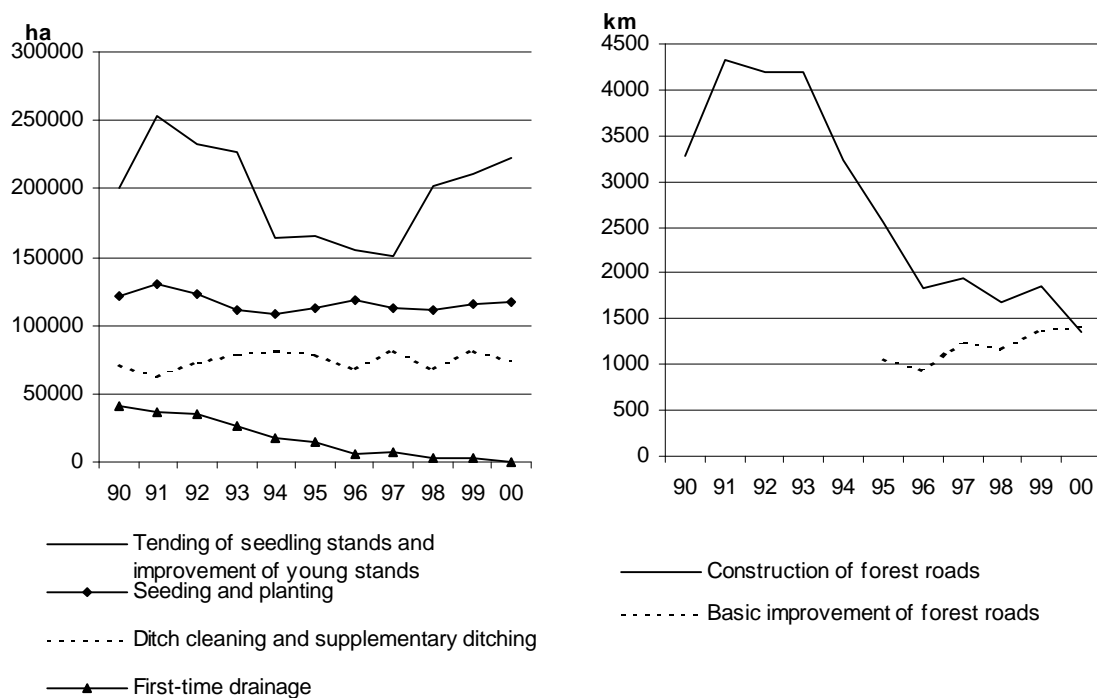


Figure 6. Most important silvicultural and forest improvement works in 1990-2000. Improvement of forest roads in 1990-1994 included. Source: Forest Statistics Information Service.



The project "Future Forest Halls" launched in 2000 has examined the factors which may interfere with the efforts to reach the objectives in silvicultural and forest improvement work. The support group and marketing and communication group of the project as well as various interest groups devised a communication project, which is mainly targeted at private forest owners and professionals providing services for these. An enquiry made among the forest owners was published on 29 September 2001. Professionals have been informed about the objectives of the campaign and communication material has been produced within the limits of the financial framework available.

In 2001 more than 70 regional advisory projects financed by the Employment and Economic Development Centres were launched, and their costs total almost €25 million. All the major regional actors involved in the forest sector take part in the implementation of these projects.

The Forestry Centres revised and updated the Regional Forest Programmes in 2001, and Regional Forest Committees were set up. The Forestry Centres coordinate the Future Forest Halls project within their own territories. This involves all the main actors who may influence the progress of the project in the regions.

The forest organisations have revised their recommendations and instructions for forest ecosystem management. The recommendations for good forest management practices drawn up by the Finnish Forest Research Institute in cooperation with various parties were completed in winter 2000, and training on these was organised during the same spring. The Forest and Park Service and forest companies revise their instructions for forest ecosystem management regularly, based on the principles set out in their environmental and quality systems. The Central Union of Agricultural Producers and Forest Owners defined the most important values for forest policy in its revised biodiversity programme.

In November 2001 two successive storms caused serious damage especially in Häme and South Ostrobothnia, where at least 7 cubic metres of wood fell, based on calculations completed at the Finnish Forest Research Institute in March 2002. Additional assistance will be directed at these areas under the work programme for sustainable forestry.

Further measures:

1. All the objectives set for silvicultural work cannot be met by means of the current level of funding. The study of the significance of the different types of work should be included in the evaluation of the National Forest Programme, and new forms of financing and possibilities to improve the productivity of labour should be examined.
2. Silvicultural and forest improvement work is promoted by means of the Tomorrow's Forests communication campaign.
3. The key area in the work under the Act on the Financing of Sustainable Forestry in 2002 is ditch cleaning and supplementary ditching, especially the development of water protection, and the tending of young stands. Special attention is directed at improving the quality of forest regeneration and restoration of areas damaged by storms.

Recreation and nature's products from forests

Objectives

The National Forest Programme ensures that traditional forms of forest utilisation and the physical and spiritual benefits that the forests offer are honoured both in the use and protection of the forests. The commercialisation and marketing of environmental tourism are developed.

Realised development

In the Follow-up Report 2000 the Forest Committee proposed the following further measures:

- 1. In the State budget adequate funds will be allocated to the construction and maintenance of hiking, camping and other recreation services on State lands.*
- 2. The implementation of the proposals for measures supporting the realisation of the National Forest Programme and the Vilnat work group will be promoted.*

The recreational use of nature includes various kinds of leisure-time activities and collection of nature's products. Based on a national inventory of the recreational use of forests, 97 per cent of Finns enjoy outdoor activities, two-thirds of them on a weekly basis. More than half of the outdoor recreation occurs on private lands or waters.

Nature activities often involve the utilisation of the gifts of nature, e.g. 56 per cent of the Finns pick wild berries (Figure 7). However, only about 4-8 per cent, 40 million kg of the annual crop of wild berries (500-1,000 million kg) is collected, three-quarters of this for household use. The annual mushroom crop varies between 350 and 1,000 million kg and 2-10 million kg of this is collected, 90 per cent for household use. People also collect wild herbs, as well as lichen to be used for ornaments. Multiple use of forests also includes reindeer husbandry and peat production.

Products collected from nature have both recreational and economic value. At its best the value of the berry and mushroom crop may reach €100 million. About 8 per cent of the Finnish population also engage in hunting. The most important game animal is moose, and the other game includes other deer, hare, fur animals, waterfowl, grouse and farmland game birds. In 2000 the value of the game bag was estimated at more than €59 million, where moose accounted for €43 million.

The Vilnat work group of the Ministry of the Environment has drawn up a programme for developing the recreational use of nature and environmental tourism. The objective is to support the production of recreational and tourism services which are economically sustainable and support the employment objectives as well as socially and ecologically sustainable use of natural resources for these purposes. In February the work group submitted its report, which proposed almost 30 measures for developing the recreational use and environmental tourism until 2010.

According to the Vilnat work group, the value added produced by tourism to the national economy of Finland totalled about €2.5 billion in 1999 and the share of environmental tourism was about a quarter of this. In 2000 environmental tourism and recreation employed about 32,000 people. There are about 2,000 farm tourism enterprises engaged in environmental tourism, about 1,000 enterprises organise various kinds of events and programmes, and there are some hundreds of camping areas, skiing and hiking resorts, etc.

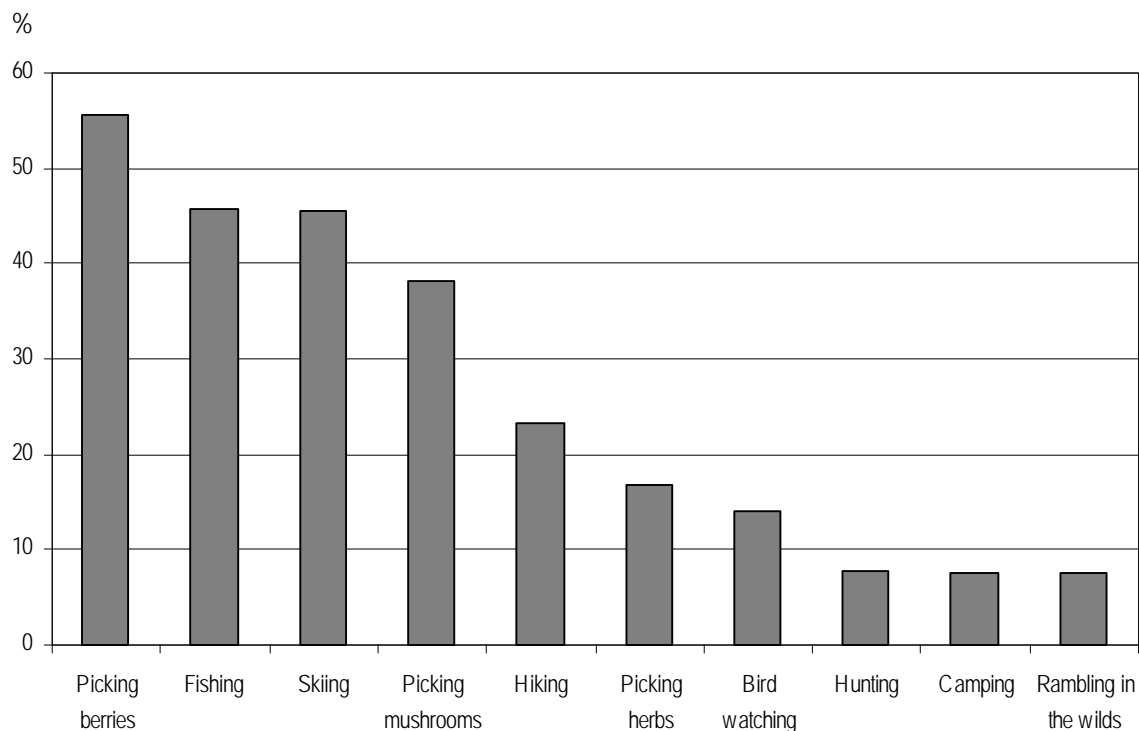
There are still problems in the financing of recreational services on State lands. The Forest and Park Service has developed the monitoring of the visits and visitors in national parks and hiking areas. Based on this data the visits have been on the increase, but the funds available for the necessary services have not followed the growing demand.

The implementation of the Development Programme for the Natural Product Sector 2000-2006 of the Rural Policy Committee's theme group for this sector started e.g. by an enquiry among the advisors involved in the natural product sector. The work of the theme group for rural tourism continued.

The Agrifood Research Centre MTT and University of Helsinki Institute for Rural Research and Training are studying environmental tourism and use of natural products from the economic perspective as well as developing a data bank for entrepreneurship in the sector.

The final report on the results of the national inventory of the recreational use of nature coordinated by the Finnish Forest Research Institute and conducted in cooperation between several research institutes, Recreational Use of Nature 2000, was completed in spring 2001. The Finnish Forest Research Institute also published a report titled "Valuation and Harmonisation of Different Uses of Forests", which aims at making the costs and benefits of recreational use and nature conservation commensurable with each other. The report describes various kinds of means for taking the different uses of forests into account in forest planning. The Finnish Forest Research Institute also monitors the development of the crops of the most common wild berries and mushrooms and draws up harvest forecasts.

Figure 7. Participation in nature-related activities in Finland. Source: Forest and Park Service.



Further measures:

1. Research and training on the recreational use of nature and environmental tourism is increased, and innovation is developed in the context of the Future Forest Halls project.

Strengthening forest know-how

Objective

The aim of the National Forest Programme is to improve forest-related know-how through stronger innovation based on research, education and expanding internationalisation.

Realised development

In the Follow-up Report 2000 the Forest Committee proposed the following further measures:

1. *The Ministry of Agriculture and Forestry and the Finnish Forest Association will launch the Future Forest Halls project in connection with the Forest Forum for Decision-Makers.*
2. *Forest Centres will launch activities based on the Learning Path for Forests in their territories.*
3. *The Ministry of Education will appoint a work group to study what kind of knowledge and skills the education on forestry and wood production provides for international activities.*
4. *The basic funding for the Centre of Excellence in the wood product sector will be strengthened according to the outlines set in the Rural Policy Programme approved by the Government.*
5. *Increasing education in forest issues in the biology and geography syllabus at primary and secondary schools will be promoted.*

In addition to the actors whose funding comes from the public sources, such as Forestry Centres, Finnish Forest Research Institute, Forestry Development Centre Tapio and Finnish Forest Association, there is a large number of different kinds of public and private actors involved in the efforts to strengthen forest-related know-how. The most important objective is to increase the interaction of the different actors involved in this work.

Joint research projects and programmes have proven a highly appropriate way of combining the resources of various fields in the research and approaching the research problems from a wider perspective. Cooperation between the producers and users of research information has been promoted in the Wood Wisdom research programme, which towards the end of the programme period focused on evaluation and definition of further information needs. In the evaluation conducted by the Finnish National Fund for Research and Development Sitra it was noted that the programme had created new contacts between the different actors and the wood processing industry was strongly committed to this work.

The BITUMI Integration Project launched in connection with the Biodiversity Research Programme FIBRE has been active in communicating the results and new know-how produced by FIBRE to the decision-making in companies, corporations and the administration. The research programme

FIGURE (1999-2002) concerning global change tries to find ways of reducing the global changes due to human activity and to outline the possibilities for societies to adjust to the changes. The SUNARE 2001-2004 research programme concerning the sustainable use of natural resources was launched in 2001.

The Ministry of Agriculture and Forestry and Finnish Forest Association have negotiated on the launching of the Future Forest Halls project on the basis of preliminary surveys. The Ministry has made preparations for selecting the project leader based on an open application process. According to the plans the Ministry will provide the basic funding of the project for a start-up period of two years, and the project will be continued by three years if the results from the first two years seem positive.

The activity of the Centre of Expertise for Wood Products started in 1999 was evaluated in 2001. Based on this, the activities are directed at three key areas, i.e. the modern wooden town, public building and consumer products, which account for about 80 per cent of the mechanical use of wood. The nationally networked Centre of Expertise for Wood Products comprises 55 actors whose expertise is made available to companies. There is cooperation with the Wood Wisdom research programme and Wood Finland action programme in bringing information to the practical level.

The objective of the Centres of Expertise is to identify regional strengths and promote economic growth as well as increase competitive products, services, companies and jobs based on a high level of expertise. The Centre of Expertise for Wood Products is funded by the Ministry of the Interior, and the funding for 2002 totalled €235,000.

The Finnish Forest Industries Federation carried out a project where about 3,000 schoolchildren in Southern Finland were told about the opportunities and future prospects of the forest sector.

The Ministry of Education has appointed an international work group for education in the forest sector to examine how secondary and higher level education in the forest and wood sectors prepares for international activities and increasing international contacts, as well as the preconditions for developing the teaching in international forest policy at the universities.

One of the key concepts in the Sixth Framework Programme for Research in the EU is the European Research Area, which aims at reinforcing the European innovation system by e.g. networking the national research programmes with the Community programmes and making national research funds available for this purpose. The preparation for the Wood Wisdom research programme includes the idea of increasing international cooperation in the funding and taking advantage of the opportunities offered by the ERA. Considerable progress has been made in the financing cooperation especially with the Swedish organisations FORMAS and VINNOVA.

In the context of the SNS (SamNordisk Skogsforskning) subject to the Nordic Council of Ministers efforts are being made to increase cooperation between the Nordic and Baltic countries and develop common research proposals for the Sixth Framework Programme for Research in the EU.

The Savotta 2000 project (2000-2006) aimed at improving the image and attractiveness of the forest sector continued. In 2001 the project concentrated on training of student advisors for the forest sector, and about a third of these took part in the training. Forest machine contractors demonstrated the harvesting of wood to secondary level and high school students.

In 1999-2001 about 3,300 people participated in the training aimed at a degree in forest ecosystem management and in the testing of the related skills organised by the Forestry Development Centre Tapio, Forestry Centres and forest schools and colleges, and 2,650 took the degree. The majority of forestry professionals now hold this degree, and forest workers, forest machine operators and entrepreneurs offering forest services are becoming increasingly interested in the training and testing their skills. Instead, the participation of forest owners has increased very slowly.

Various organisations in the forest sector offer training to their staff and to the contractors they work with. In 2001 training was organised, in particular, in the use of information transfer systems, environmental and ecosystem management, instructions for forest management as well as quality of wood and marking for cross-cutting. The Forest and Park Service designed an Internet-based e-learning package for contractors.

An operational model called Learning Path for Forests ("Metsän Oppimispolku") of the Finnish Forest Association and National Board of Education was introduced to develop teaching in forests and wood from pre-school to high school level. Forestry Centres are responsible for the implementation of the model in cooperation with other relevant parties, such as the Finnish 4H Federation. The Finnish Forest Association has continued its cooperation with the association of teachers of biology and geography and delivered the Learning Path for Forests material to all schools, day-care centres, parishes and municipal education authorities. The material is also available on the Internet. Schools are informed about various kinds of events and development in the forest sector to provide them with background material for designing their curricula.

Revised basic degree in the field of forests and in nature and the environment were introduced into the basic vocational training. Students taking the basic forest degree may become e.g. forest workers, forest machine operators or engage in forest ecosystem management, and in 2001 500 student were admitted. The basic degree in nature and the environment leads to employment in environmental management or entrepreneurship, reindeer husbandry or natural economy industries.

Taking these basic degrees takes three years (120 credits) and they include at least six months (20 credits) of practical training. One new element in the degrees is demonstrations of the professional skills given, as far as possible, in real working situations. The planning of these demonstrations was started in 2001 in cooperation between the training and work organisations. The Ministry of Education is considering a proposal concerning the realisation of learning at work in fields dominated by small capital intensive companies, such as machine contracting.

The Forest Responds network service launched in autumn 1999 was originally designed for teachers, the media and decision-makers, but now the target group also includes forest professionals. In autumn 2001 the service had 4,000-5,000 monthly users, and more than 1,000 teachers had registered and were using the service regularly. There is a similar Swedish-speaking service at www.skogsreflexen.net.

The expert group for research, follow-up and information systems submitted a proposal concerning the organisation of national monitoring of biological diversity to the Ministry of the Environment in January 2002. The monitoring would be based on 24 general monitoring projects to be continued and 4 development projects. Costs can be considerably reduced by the voluntary work. The collection of the biological variables in the national forest inventory constitutes an important element in the national monitoring of biological diversity.

In autumn 2001 the Finnish Forest Research Institute published the final report of the research programme on the biological diversity of forest ecosystems titled "Diverse Forest". The report describes the impacts of the structure of forest stands on the biological diversity of forests, monitoring of forest biodiversity and genetic diversity as well as the economic impacts of maintaining biodiversity and the opportunities involved. The Biodiversity Research Programme (FIBRE) and the related integration project (BITUMI) of the Academy of Finland started the compilation of a book on the diversity of Finnish forest ecosystems in 2001, including the ecological foundations of forest ecosystems as well as practices and public means for securing biological diversity.

Further measures:

1. Cooperation and coordination between the Wood Wisdom II research programme, Wood Finland action programme, nationally networked Centre of Expertise for Wood Products and Wood Europe Campaign is increased, with the transfer of research information to practice as one of the main objectives.
2. Activities promoting the knowledge on the forest sector from pre-school to high school level are continued.

Finland is active in international forest policy

Objectives

The aim of the National Forest Programme is to further sustainable development by taking an active part in international forest policy and by co-operative research and training programmes and by pursuing active media exposure.

Realised development

In the Follow-up Report 2000 the Forest Committee proposed the following further measures:

1. *In the next few years the most important issues in the international forest policy will be the UN Forum on Forests (UNFF), forest issues in the Convention on Biological Diversity and the northern dimension. Finland takes an active part in international processes and the work of different organisations.*

Finland has been active in international policy processes to promote sustainable forestry, with special emphasis on the development of national forest programmes as well as criteria and indicators. Special efforts have also been made to promote research and training cooperation as well as information and communication related to forests and the environment.

The United Nations Forum on Forests (UNFF) was set up in New York in February 2001. According to the Finnish position, the objective of the UNFF should be to promote sustainable forestry globally, support the protection of forests and preserve biological diversity. These objectives could be met by means of a global forest convention and processes aimed at developing criteria and indicators for sustainable forestry as well as national forest programmes. The Finnish objective is that the work programme of the UNFF would concentrate primarily on the steering and

coordination of international forest policy as well as implementation of measures proposed by the Intergovernmental Forum and Panel on Forests (IFF and IPF).

The work programme on forests of the Convention on Biological Diversity (CBD) has been prepared alongside with the UNFF process. In the Finnish opinion it is important to coordinate the forest programme with the measures recommended by the IPF/IFF as well as the UNFF. There is an obvious need to remove overlaps both within the work programme and in relation to the other international processes. Finland has stressed the role of national forest programmes and criteria and indicators for sustainable forestry also in meeting the biodiversity objectives as well as the market orientation and voluntary basis in forest certification.

The CBD and its work programme on forests do not as such cause any obligatory changes to the Finnish forest policy. Finland promotes the implementation of the work programme e.g. by financing the work of a Finnish forest expert at the CBD Secretariat in 2001-2002.

Forests as carbon sinks have been an important topic in the negotiations on climate change. Decisions on the most significant open questions, such as flexibility mechanisms and rules for emission quotas, were reached in Bonn in July 2001 and Marrakech in November 2001, making it possible for the ratification of the Kyoto Protocol to proceed. In the follow-up to the Ministerial Conference on the Protection of Forests in Europe expert work has been done relating to national forest programmes, biodiversity in forest ecosystems, forest protection and classification system for conservation areas as well as forest issues in Eastern and Central Europe. Pan-European criteria and indicators for sustainable forestry have also been developed, which will be the dominating themes at the Vienna Conference to be held in 2003. Finland and Sweden have also stressed the cultural and spiritual values related to forests.

The Finnish objective is to continue the follow-up and preparation of the Ministerial Conferences on the Protection of Forests as a high-level pan-European process, where non-EU countries are also welcome to participate.

A large number of experts in forest inventory (TBFR) and forest protection (COST E4, IUCN) are involved in the studies aimed at harmonising the forest protection concepts. The cooperation project of the EU COST Committee 'Protected Forest Areas in Europe – Harmonisation and Analysis' in 2001-2005 aims at harmonising the concepts used and improving the accuracy of the data compiled in connection with forest inventories. The project promotes the discussion on forest policy and classification of conservation areas when preparing to the Conference.

Cooperation in the neighbouring areas is a central element of the international forest activities in Finland. In the second phase of Finnish-Russian Development Programme on Sustainable Forest Management and Conservation of Biological Diversity in Northwest Russia (NWRDP) in 2001-2004 the main objective will be to increase the effectiveness of the projects, develop cooperation between the public and private sector as well as increased bilateral and multilateral international cooperation e.g. in the context of the Northern Dimension of the EU.

In the Baltic 21 Programme Finland shares the responsibility for coordinating the forest sector with Lithuania. This is realised through an international as well as a national network of experts, with representatives from different ministries and environmental and other organisations. The forest sector programme is implemented in work groups, and the topics include the promotion of private forestry, survey of the conservation status of forests in the Baltic Sea region, setting up demonstration areas

for sustainable forestry, promoting the use of wood for energy and other uses of wood as well as exchange of information on the criteria and indicators for sustainable forestry.

Finland chairs the Arctic Council in 2000-2002. The objectives during the Finnish Presidency include increased cooperation between the Arctic Council and the EU, reinforcing the position of the Council on the international arena as the promoter of arctic issues, intensifying the protection of the arctic environment, clarification of the activities of the Council in support of sustainable development as well as promoting arctic research. Finland will also make an effort to increase the participation of the local residents and aboriginal peoples of the regions concerned in the development of arctic cooperation.

National forest programmes and development of the sustainable use of forests have been the main elements in the development cooperation in the forest sector financed by Finland. Each year Finland supports 10-15 projects in different parts of the world, as well as engages in other cooperation projects with e.g. Mexico, Indonesia and China.

The offices of forest experts located in Berlin and, from autumn 2001, in Moscow make a significant contribution to the follow-up of international forest affairs. These experts follow the discussion on forests and forestry in the countries concerned, disseminate information on Finnish forestry and forest industry, maintain contacts with the relevant cooperation partners, as well as report on the current issues regularly to Finland.

Further measures:

1. Cooperation with the Russian forest sector is continued in accordance with the principles set out at the Moscow Summit in March 2002.
2. Preparations for the Fourth Ministerial Conference on the Protection of Forests in Europe in Vienna in 2003.
3. Further study on the impacts of the EU enlargement on the forest sector and reassessment of the Finnish positions concerning forest policy in the EU.

Regional forest programmes and forest committees

The revision of the regional forest programmes of the Forestry Centres (regional target programmes for forestry) according to the outlines set out in the National Forest Programme 2010 was completed in spring 2001. The objectives for the management and use of forests have been redefined in the revised programmes. The most important ones are the new sustainable harvesting objectives, where the special characteristics of each region have been taken into account. The objective set for roundwood production in the regional forest programmes (2001-2005) is about 3 million m³/year higher than in the earlier programmes (regional target programmes for forestry 1998) (Table 6). The revision did not lead to any significant changes in the difference between the estimated maximum sustainable roundwood production calculated at the Finnish Forest Research Institute and objectives for roundwood production set in the regional forest programmes. The introduction of forest certification at the turn of the millennium has lowered the roundwood production objective.

Table 6. Objectives for roundwood production set in the regional forest programmes.

	million m ³ /year
Regional target programmes for forestry 1998	59.5
Regional forest programmes 2001-2005	62.6
National Forest Programme 2010	63-68 by 2010
Finnish Forest Research Institute	68.8 1996-2005

The objectives for forest regeneration are based on the structure of forests and roundwood production objectives. The natural regeneration area proposed in the regional forest programmes is 55,000 ha/year, while the objective set in the National Forest programme is 60,000 ha/year. The objective for artificial regeneration is 153,000 ha/year in the regional forest programmes and 135,000-150,000 ha/year in the National Forest Programme.

According to the regional programmes, the tending of seedling stands should cover 195,000 ha/year, and the objective set for the tending of young stands is 59,000 ha/year. Based on the National Forest Programme altogether 250,000 ha/year of young stands should be tended, including the tending of seedling stands as well as pre-commercial thinning. Thus the objective set in the regional programmes is somewhat higher than that of the National Forest Programme.

The objective for ditch cleaning and supplementary ditching is 105,000 ha/year, which is a little less ambitious than the target set in the earlier programmes. In the National Forest Programme the objective for ditch cleaning and supplementary ditching is 110,000 ha/year, which is derived from the regional target programmes for forestry completed in 1998. In the regional programmes the objective for the construction and maintenance of forest roads is slightly lower than in the National Forest Programme. In the regional programmes altogether 927 km/year of forest roads should be constructed (1,000 km/year in the National Forest Programme) and the objective for maintenance is 1,875 km/year (2,000 km/year in the National Forest Programme).

According to the regional forest programmes, the quantities of chips resulting from ecosystem management measures should be increased. Projects highlighting special local features and regional diversity are considered particularly significant. The key areas in ecosystem management projects vary according to the vegetation zone from taking account of landscape and waters to restoration of rich fens. One significant means of promoting ecosystem management projects is to activate the forest owners through information and counselling.

In the evaluation round of the regional forest programmes the impacts were assessed in more detail than earlier. The Forestry Centres used the data on impact assessment completed in 2000 for the evaluation, which harmonised the assessment and increased the number of elements included. The impact assessment was conducted before the programmes were approved in the boards of the Forestry Centres, which influenced the sections concerning the programme implementation. In particular, in water protection in connection with ditch cleaning and supplementary ditching the impact assessment revealed that the identification of social impacts as well as combining data from different levels were considered problematic.

The Metsä vastaa (Forest Responds) service of the Forestry Development Centre Tapio includes pages for the regional forest programmes to make it possible to view and compare various issues based on the criteria and indicators for sustainable forestry in different regions. The pages are also aimed at facilitating the participation of citizens and various organisations in the programme work.

In June 2001 the Ministry of Agriculture and Forestry appointed regional forest committees to support the Forestry Centres in the implementation and follow-up of the forest programmes. The committees were appointed for three years at a time, and thus the first term comes to an end in 2003. The work of the committees has started quite well, and they are considered to provide an appropriate forum for cooperation. Each of them convened once or twice in 2001.

In the regional forest programmes the main attention will now be directed at their follow-up. In 2002 the regional forest committees draw up an implementation and follow-up plan for the forest programmes. Among other things the follow-up should produce follow-up data based on the criteria and indicators for sustainable forestry, which will also be presented on the Internet pages of the regional forest programmes.

Further measures:

1. Cooperation and interaction between the regional forest committees and National Forest Committee is developed.

Organisation of the implementation and follow-up of the programme

Forest Committee and Working Committee

The Government appointed the Forest Committee for the implementation and follow-up of Finland's National Forest Programme on 26 May 1999. The Forest Committee supports the Ministry of Agriculture and Forestry in extensive and important forest policy issues. The term of the Forest Committee came to an end on 31 March 2002. The Committee was chaired by the Minister of Agriculture and Forestry Kalevi Hemilä until 31 January 2002 and Minister of Agriculture and Forestry Raimo Tammilehto from 1 February 2002 until the end of March. The vice-chairmen were the Directors of the Department of Forestry, Jan Heino (26 May 1999 - 31 December 1999), Sampsa Sivonen (1 January 2001 - 31 January 2001) and Aarne Reunala (from 1 February 2001). The members of the Forest Committee were:

Director, Nature Conservation **Ilkka Heikkinen**, Ministry of the Environment
Senior Officer **Turo Hentilä** (26 May 1999 - 22 August 2000), Ministry of Finance
Senior Officer, Legal Affairs **Seija Kivinen** (from 23 August 2000), Ministry of Finance
Senior Adviser **Marja Kokkonen**, Ministry of Agriculture and Forestry
Industrial Counsellor **Paula Nybergh**, Ministry of Trade and Industry
National Officer **Lauri Ainasto**, Wood and Allied Workers' Union
Agrologist **Lena Aschan**, Svenska Lantbruksproducenternas Centralförbund, SLC (Central Union of Swedish-Speaking Agricultural Producers in Finland)
Chairman **Timo Helle** (26 May 1999 - 11 February 2001), Finnish Association for Nature Conservation
Project Manager **Harri Hölttä** (from 12 February 2001), Finnish Association for Nature Conservation
Managing Director **Armi Korkeaniemi**, Woodmarketnet Oy
Director **Martin Lillandt**, Central Union of Agricultural Producers and Forest Owners
Chairman **Håkan Nystrand**, Union of Finnish Foresters
Managing Director **Matti Peltola**, Trade Association of Finnish Forestry and Earth Moving Contractors (TAFSEC)
Agronomist, M. Pol. Sc. **Marjatta Pikkarainen**, Kainuu Regional Centre of Women's Advisory Organisation for the Development of Rural Areas
Managing Director **Jukka-Pekka Ranta** (from 3 May 2000), Finnish Sawmills
Field Executive **Liisa Sahi**, Suomen Partiolaiset – Finland's Scouters
Forester **Päivi Salpakivi-Salomaa**, Society of Finnish Professional Foresters
Secretary-General **Timo Tanninen**, WWF
Director **Hannu Valtanen**, Finnish Forest Industries Federation
Deputy Director General **Pentti Lähteenoja**, Ministry of Agriculture and Forestry, Secretary of the Forest Committee

On 14 October 1999 the Forest Committee appointed a Working Committee, which was complemented on 19 January 2000, and which acts as the secretariat of the Forest Committee. The chairman of the Working Committee is the Director of the Department of Forestry of the Ministry of Agriculture and Forestry Aarne Reunala. The members are:

Senior Officer **Hannu Jokiluoma**, Ministry of Social Affairs and Health
Senior Scientist **Jukka-Pekka Jäppinen**, Finnish Environment Institute
Director **Ilmo Kolehmainen**, Forestry Development Centre Tapio
Regional Director **Kirsi-Marja Korhonen**, Forest and Park Service

Assistant Manager **Timo Nyrhinen**, Central Union of Agricultural Producers and Forest Owners
Research Centre Director **Heikki Pajuoja**, Finnish Forest Research Institute
Director **Matti Suihkonen**, Pohjois-Savo Forestry Centre
Counsellor **Markku Väre**, Finnish Forest Industries Federation
Deputy Director-General **Pentti Lähteenoja**, Ministry of Agriculture and Forestry, secretary

The broader composition of the Working Committee includes the representatives of work groups operating in connection with the Forest Committee as well as other experts as considered necessary.

The duties of the Working Committee are:

1. Preparation of the work of the Forest Committee. This is the main duty of the Working Committee. Matters to be taken to the Forest Committee are dealt with at the broad Working Committee. The Working Committee convenes about once a month.
2. Coordination of the work of ad-hoc work groups. The Working Committee establishes and maintains the necessary contacts between ad-hoc work groups. The Working Committee may draw up proposals to the Forest Committee concerning the measures to be taken based on the reports of ad-hoc work groups, and it may also propose the establishment of new work groups. The minutes of the Working Committee are forwarded to the members of the Forest Committee.
3. Drawing up follow-up reports. The annual follow-up reports monitor the implementation of Finland's National Forest Programme 2010, taking into account the economic, ecological, social and cultural dimensions of the sustainability. The procedure is similar to that followed in the monitoring of the environmental programme for forestry. The Follow-up Report 2000 of the National Forest Programme was approved at the Forest Committee on 14 March 2001 (Publications of the Ministry of Agriculture and Forestry 4/2001).

Ad hoc work groups

Ad-hoc work groups may be appointed by the competent Ministry to develop the different aspects of Finland's National Forest Programme 2010. The work groups report to the Forest Committee on their work. The following work groups have been appointed so far:

International Forest Policy Committee (7 May 1998 - 30 December 2000), (1 January 2001 - 30 December 2003)

Work Group for Environmental Impact Assessment (EIA) (12 March 1999 - 1 October 1999)

Expert Group for Environmental Impact Assessment (12 March 1999 - 17 September 1999)

Work Group for the Forest Protection in Southern Finland and Ostrobothnia (2 June 1999 - 31 August 2000)

Summer Harvesting Work Group (21 July 1999 - 31 March 2000)

Support Group for Revision of Regional Forest Programmes (7 December 1999 - 30 March 2001)

On 14 December 2000 the Government appointed a committee to draw up a proposal for a target, financing and action programme for forest protection in Southern Finland, western part of the Province of Oulu and South-western Lapland. The term of the committee came to an end 30 June 2002, and it reports to the Cabinet Committee on Economic Policy on the progress of its work.

Annex 1. National projects in the implementation and follow-up plan 1 January 2000 - 31 March 2002

1. Private sector

Project group: *Simo Jaakkola* (Trade Association of Finnish Forestry and Earth Moving Contractors), *Kirsi-Marja Korhonen* (Forest and Park Service), *Timo Nyrhinen* (Central Union of Agricultural Producers and Forest Owners), *Markku Väire* (Finnish Forest Industries Federation) and *Pentti Lähteenoja* (Ministry of Agriculture and Forestry)

1.1 Increasing the use of energy wood

Objective: Increase the annual use of energy wood by five million cubic metres by 2010.

The State's energy policy supports e.g. the increased use of wood-based fuels in forest industry. Part of the State subsidies is directed at investments into the different stages of the wood fuel production. In 2002 a number of major projects have been completed, which will considerably increase the use of wood for energy.

The Act on the Financing of Sustainable Forestry includes aid for the chipping of energy wood, which may be applied 1 December 1999 - 31 December 2002. The aid for the chipping of energy wood was raised and the conditions for the aid for young stand tending sites were improved in spring 2001. The criteria for State aid will be to be reviewed annually.

Stumpage price is now paid for logging waste as well. However, the impacts of the harvesting of energy wood on the nutrient balance in the soil should be examined.

The budget proposal for 2002 includes increased funding for promoting the use of renewable energy sources, investment aid and communication.

1.2 Adequate silviculture measures

Objective: To take care of silviculture and land improvement measures so that the annual roundwood production, which will grow to 63-68 million m³ by 2010, lies on a sustainable basis.

The legislation on forests and environmental protection, the recommendations and instructions for forest management as well as forest certification have influenced the treatment of forests in a significant way. The follow-up of the forest ecosystem management and inspection of harvesting sites by the Forestry Centres and Forestry Development Centre Tapio have shown that the quality of forestry work has improved considerably in recent years, but there is still room for further improvement.

In the past few years the forest regeneration area has been 160,000-170,000 ha/year, of which about a third has been harvested by methods aimed at natural regeneration. Artificial regeneration and its share in the total regeneration area have been on the increase in the past couple of years. Based on the inspections, the regeneration sites meet quite well the requirements set out in the Forest Act and the criteria for forest certification, but special emphasis should be given to the quality of regeneration work, especially monitoring the success in natural regeneration. Forest Management Associations, Forestry Centres and the Forest Research Institute have launched a project titled

“Controlling the Quality of Forest Regeneration” (Metsänuudistuksen laadun hallinta). The first results of the project have shown that incorporating this into the practical regeneration work is of primary importance in terms of the quality of the work. For this purpose, the funding for the project should continue in cooperation with the Forestry Centres and Forest Management Associations.

There is a broadly based cooperation project relating to the enforcement of the Forest Act (MUSTI), which is being tested during 2002 in the territory of the North Karelia Forestry Centre.

The annual thinning area has grown to about 300,000 ha. First thinnings should be further increased in private forests, but the thinning area has grown in accordance with the objectives and schedule set out in the National Forest programme. The changes in e.g. the legislation concerning financing have made a significant contribution to this. In addition to first thinning, special attention should be directed at felling in areas subject to ditch cleaning and supplementary ditching.

1.3 Recommendations and instructions for forest ecosystem management

Objective: To secure the preservation of biological diversity in commercial forests in the light of the most recent research information and taking account of the international commitments.

The “Recommendations for good forest management” were completed at the Forestry Development Centre Tapio in the beginning of 2001. The Central Union of Agricultural Producers and Forest Owners revised its forest biodiversity programme in 2000, and the forest industry companies and Forest and Park Service updated their instructions for the treatment of forests in accordance with the requirements due to forest certification, environmental and quality systems and forest management recommendations in 2000 and 2001. The revision of the environment guide of the Forest and Park Service is underway.

Forest certification was implemented in all Forestry Centres during 1999 and 2000. The related follow-up and audits will be conducted annually during the period of validity of the certificate. The results of the forest management measures are checked by means of a sampling-based system on the lands of all forest ownership categories as well as in connection with the certification audits.

This project has been completed.

1.4 Development of wood trade

Objective: Developing the functioning of the wood trade system to secure the utilisation of all timber assortments, including wood from first thinning as well as the availability of mainly domestic wood for the forest industry. This will also lay the foundations for forest industry’s domestic investments.

Any agreement procedures for price recommendations between the parties to the wood market are prohibited by a decision of the Competition Council. Thus wood trade is now based on a free market economy.

An Internet-based information exchange www.metsasano-mat.net has been constructed to support the decision-making of private forest owners in wood trade. In 2000 this was extended to cover the whole country, and in addition to real-time information on the wood market it contains forecasts on the development of the product markets and the economic situation, bulletins and a special wood

exchange. During the autumn of 2002 a number of Forest Management Associations will be selected to transfer all their data on marked stands to the Internet pages.

The Internet service is believed to improve as more experience is gained from its use, so that it will reach an increasing number of forest owners planning to sell wood.

1.5 Maintenance of the forest road network

Objective: Appropriate maintenance and construction of the forest road network based on the forest industry's need for wood and the needs of sparsely populated areas.

Forest road network is needed for wood industry's transport, silviculture as well as for the people living in the sparsely populated areas. The objective set for the construction and basic improvement of forest roads in the National Forest Programme is 2,800 km/year, but e.g. in 2000 work was done on only about 1,400 km. The preconditions for basic improvement have improved, however, and in connection with the amendments to the Act on the Financing of Sustainable Forestry in 2001 the State subsidy for the basic improvement of forest roads was raised by 20 per cent.

According to the Rural Policy Programme 2001-2004, the State subsidies for private roads should be raised to €25.2 million, plus the funding for the annual maintenance of forest roads, which means that the subsidies total €30.3 million.

1.6 Utilisation of information technology in the forest sector

At the first stage, the joint project of the Forestry Development Centre Tapio and Forestry Centres was launched in the beginning of 2001 for control purposes (follow-up of the forest regeneration areas). The objective of the project is to develop the collection, management and utilisation of data on the regeneration areas in the Forestry Centres for the part of all forest ownership categories. The notification of land use and establishment of seedling stands to the Forestry Centre in electronic form is being tested. In the next stage the electronic transfer will be extended to the processing of forest improvement projects, and in the future electronic transactions may also relate to the utilisation of information on forest plans.

The realisation of the product-oriented wood procurement for the forest industry calls for flexible harvesting and transportation chains capable of reacting rapidly to changes, whose design and steering is largely based on information systems. Up-to-date information on wood resources and purchased stands is needed for the planning. Information on forest planning can also be used to an increasing extent when this is made available to the procurement process through data networks in connection with wood trade.

In addition to the sending of instructions, measurements and quality requirements between the user and harvester of timber, the computers and wireless data transfer systems can be used to automatize the slashing of wood as far as possible.

In the wireless data transfer the GSM is the primary system, but this will be replaced by the new GPRS networks and third generation mobile phone networks, allowing even more rapid transfer of larger quantities of data.

The steering systems for long-distance transportation of timber are based on the use of stationary information. The introduction of the GPRS networks is going to improve this system as well so that

the data on the location of heaps of wood can also be used for the steering the work of traditional forest tractors.

The geographical information systems of the Forest and Park Service is used in the wood procurement as well as updating the data on the land use, sites, nature, measures and stands as well as the boundaries of real estates. The geographical information system is very important in the strategic planning concerning the use of lands and natural resources as well as in the regional ecology planning.

From the early 1990s, the development of information technology, rapid communication of data and increase in the amount of available information e.g. via the Internet have changed the information and communication activities considerably from the early 1990s. The possibilities offered by the www- technology on the Internet for presenting static or dynamic data, i.e. texts, pictures and sound, are used widely in the forest sector as well.

Most of the forest organisations have their own www-homepages.

1.7 Securing the supply of skilled labour- Savotta 2000

Objective: There is an adequate amount of skilled labour available at all levels and in all parts of the country.

The forest sector employers launched the Savotta 2000 project to find out the necessary resources and means to secure the availability of labour in 2000-2006. The three project groups are: 1. Need for resources in the forest sector in 2000-2006, 2. Image of the forest sector and 3. Training in the forest sector.

At present the forest labour situation is satisfactory, and there is some shortage only for the part of skilled logging truck drivers. In autumn 2002 training sessions will be organised in the regions to provide information on the forest sector and related work opportunities, especially for the young, as well as on the education and training available in the sector. A brochure, CD and new video are being used in the training.

The Savotta 2000 project is making good progress.

1.8 Acceptability of forestry internationally

Objective: Securing the competitiveness of products based on domestic wood.

In 2000 and 2001 the most important project aimed at promoting the acceptability of Finnish forestry in international contexts and, through this, the competitiveness of domestic wood was the implementation of forest certification. This is based on the Finnish Forest Certification System FFCS, which has been approved under the Pan-European Forest Certification Scheme PEFC. The territories of all Forestry Centres were certified by the end of 2001. The Finnish Forest Certification Council has issued the right to use the PEFC logo to more than 30 companies.

The Finnish Forest Foundation set up in 1995 funds various kinds of projects aimed at the construction of a modern and responsible image for the forest industry in order to promote the sale of wood and wood-based products. The funds are collected through voluntary payments in connection with wood trade. Half of the funds are directed at international communication and other

international activities, about a third is directed at domestic sales promotion and the rest is used for research. The Foundation has been involved in many highly significant projects in the Finnish forest sector.

2. Administrative sector of the Ministry of Agriculture and Forestry

Project group: *Aarne Reunala, Matti Setälä, Jouko Paloniemi, Anders Portin, Marja Hilska-Aaltonen, Matti Heikurainen and Pentti Lähteenoja*

2.1 Coordination of the implementation and follow-up of the National Forest Programme

Objective: Securing appropriate coordination of the programme implementation and related follow-up, especially between the different projects.

On 27 September 2000 the Forest Committee approved the implementation and follow-up plan for the National Forest Programme from 1 January 2000 till 31 March 2002, based on the preparation by the Working Committee. The implementation and follow-up plan includes 34 projects to be implemented under the different ministries or in the private sector. The connections between the different projects are also listed. There is a project group responsible for the projects of each administrative sector as well as the private sector, with representatives from the responsible ministry or private sector organisation as well as from the Working Committee as well as the Ministry of Agriculture and Forestry to ensure appropriate coordination between the projects and project groups.

The Ministry of Agriculture and Forestry has the general responsibility for the implementation and follow-up of the National Forest Programme, and performance targets contributing to meeting the objectives have been agreed on with the Forestry Centres, Forestry Development Centre Tapio, Forest and Park Service and forest research institutes. The Forest Committee supports the Ministry in the implementation and follow-up of the programme. The Follow-up Report 2000 prepared by the Working Committee was approved at the Forest Committee on 14 March 2001.

2.2 Tomorrow's Forests

Objective: Increasing the silvicultural and basic improvement work and number of ecosystem management projects.

The Tomorrow's Forests project until 2003 supports the adjustment of the silvicultural objectives set in the National Forest Programme to ecosystem management, where the forest owners are in a key position. The project aims at developing the communication and counselling to improve the services available to forest owners. More efficient communication, training and counselling targeted at the forest owners will be developed based on a survey conducted in the beginning of 2001.

The Forestry Centres are responsible for the regional coordination of the Tomorrow's Forests project. The support group appointed by the Ministry of Agriculture and Forestry supports national and regional cooperation and the Young Stand Management campaign as well as implements a national communication project together with the different actors involved. The group is assisted by a marketing and communication group.

2.3 Development of joint forest ownership

Objective: Development of different forms of joint forest ownership

The work group for the development of joint forest ownership proposed the application of majority decisions in corporate forestry, facilitating the establishment and expanding of joint forests, tax support for limited companies practising forestry as well as direct aid for joint forest ownership.

The only concrete measure introduced so far is the reform of the Act on Joint Forest Ownership, and the objective was to submit the Government proposal to the Parliament during the spring session 2002.

Recently efforts have been made in the private sector to develop new models for forest ownership to make the benefits of scale such as in large-scale forestry available to private persons.

2.4 Development of instruments for forest policy

Objective: Possibilities for more efficient use of the instruments for steering the forest policy are examined.

The research project 'Evaluating Financing of Forestry in Europe – EFFE' examines the use of financial instruments of forest policy in Europe in relation to the common agricultural policy of the EU. The study covers the EU and EFTA countries as well as some transition economies, and it aims at evaluating the costs due to State intervention in a similar way. The impacts, efficiency and fairness of the economic instruments in different countries are also evaluated. The assessment of the economic impacts covers both timber and other commodities produced by forests.

Ecological impacts are evaluated by means of the criteria for sustainable forestry set out at the Ministerial Conference on the Protection of Forests. The social aspects include the impacts of the financial instruments of forest policy on regional development, especially incomes and employment as well as on the work and living conditions of forest workers and family forest owners. The research project is coordinated by the EFI, and the Finnish participants are the University of Joensuu and the Finnish Forest Research Institute.

The Finnish Forest Research Institute is studying the impacts of forest counselling and planning, and there are also a number of projects concerning the development of forest planning. The Research Institute has developed the quality control of forest regeneration in cooperation with the Forestry Centres, which have also launched several ecosystem management projects. The strategies for forest planning and counselling have been revised under the guidance of the Ministry of Agriculture and Forestry.

2.5 Research and product development activities in the forest cluster

Objective: Improving the forest know-how by reinforcing the innovation activity based on research, training and internationalisation.

Interaction between the different parties to the innovation system in the key areas for research and development set out in the programme has been developed through the research programme for food sector titled Wood Wisdom. The programme also lays special emphasis on recognising the future strategic needs for information in the forest sector. Based on this, the continuation of the programme has been prepared in cooperation with the different financing partners (Finnish

Technology Agency, Academy of Finland, Ministry of Agriculture and Forestry, Ministry of Trade and Industry). The Wood Wisdom II launched in 2002 aims at extending the range of actors involved even further by taking advantage of the possibilities for international networking offered by the European Research Area (ERA). The delimitation of the programme has also been clarified. One objective of the programme will be to find new ways of combining the objectives of producing information and putting it to practice through close cooperation between the companies and Centres of Expertise.

The cooperation between the different parties involved in innovation has also been developed under the Biodiversity Research Programme (FIBRE 1997-2002), research programme concerning the sustainable use of natural resources (SUNARE 2001-2004) and research programme concerning global change (FIGARE 2000-2003).

The National Forest Programme proposed the establishment of a Forum for Innovation for the forest sector to increase the interaction between the producers and users of information. The Ministry of Agriculture and Forestry conducted a preliminary survey on the matter, which was presented to the Forest Committee on 12 December 2000. The Forest Committee approved the proposal, and the project titled Future Forest Halls was launched.

2.6 International forest policy

Objective: Support the promotion of sustainable forestry as well as acceptability and sale of wood-based products on the world market.

The objective of the Advisory Board for International Forest Policy is to formulate and harmonise the Finnish positions as well as to communicate these to the different actors in the forest sector. The Board has held 6-8 meetings each year as well as organised open seminars on special topics.

The significance and intensity of international forest policy has grown considerably during the past decade, after the Rio meeting. On the global level the possibilities to draw up an international forest convention has been discussed in the Intergovernmental Forum and Panel on Forests. The first session of the UN Forum on Forests was held in New York on 11 - 23 June 2001. The conventions on biodiversity and climate change have major impacts on the forest sector as well. International forest policy includes the work under various international organisations, such as FAO, UNEP and UNDP.

Three Ministerial Conferences on the Protection of Forests in Europe were held during the 1990s, and e.g. the foundations for the national criteria and indicators were laid as a pan-European process. In most forest issues the EU has no direct authority, but it has a major role in agricultural, environmental and regional policy. In the neighbouring areas there is bilateral cooperation with Russia, and important work is being done under the Baltic 21 to realise sustainable development in the neighbouring countries.

2.7 Forest and wood product sector in the Rural Policy Programme

Objective: Implementation of the measures concerning the forest and wood product sector in the Rural Policy Programme.

The Rural Policy Programme for 2001-2004 "Countryside for the People – rural policy based on will" examines the National Forest Programme and policies directed at the forest sector in the

context of other related sectors, such as agricultural, rural, employment and energy policy. Many of the proposed measures have been taken directly from the National Forest programme.

The Rural Policy Programme was submitted to the Government on 10 November 2000, which issued a resolution on the outlines for the rural policy in 2001-2004 on 5 April 2001. The resolution supports on a general level, among other things, the implementation of the forest sector measures, with special emphasis on the wood product sector and Wood Finland Action Programme, Savotta 2000 project aimed at securing the availability of labour in the forest sector, doubling the State subsidies for private roads as well as survey of agreements concerning the rural areas, which could also include forest measures. The State funding for Centres of Expertise, including the Centre of Expertise for Wood Products, as well as their influence on the regions concerned should be reinforced.

The Act on the Financing of Sustainable Forestry was amended as of 15 May 2001 so that the funding for forest improvement may also be used for basic renovation of roads needed for wood transportation which were not originally constructed by means of these funds.

In autumn 2001 about 500 persons began studies aimed at the basic degree in the forest sector, half of them in the programme for forest machine operators, and the other half in the programmes for forestry and multiple use of forests. The interest in forest work has fallen, and workers are now being searched for from Russia and Estonia.

The Government launched the Wood Europe campaign on 2 March 2001, and the work has been started under the Minister of Foreign Trade and Minister of Agriculture and Forestry. In 2001 the theme was "wood in interior design", and the campaign work group has drafted a proposal for the wood building programme of the EU.

3. Administrative sector of the Ministry of the Environment

Project group: *Pekka Salminen* (Ministry of the Environment), *Jouko Paloniemi* (Ministry of Agriculture and Forestry) and *Jukka-Pekka Jäppinen* (Finnish Environment Institute)

3.1 Development of a nature conservation network

Objective: To reach and maintain a favourable conservation status of habitats and species by means of an appropriate combination of conservation areas and commercial forests where biological diversity is taken into account.

The possibilities to improve forest conservation in Southern Finland and Ostrobothnia is being examined at the so-called METSO committee (committee for forest conservation in Southern Finland) based e.g. on the report of the ESSU work group, which studied the need for the conservation of forests in Southern Finland and Ostrobothnia. The three work groups under the METSO committee are concerned with 1) study of forest conservation in Southern Finland, i.e. the need for research and surveys on forest conservation, 2) means for securing the biological diversity of forests in Southern Finland, i.e. the current means and their development as well as proposals for new methods of forest conservation, and 3) methods and criteria for the assessment of the ecological, economic and social impacts of forest conservation, i.e. this work group drafts the proposal of the METSO committee concerning the development of the conservation of forests in Southern Finland and Ostrobothnia.

The Ministry of Agriculture and Forestry has set up a work group and project to support the work of the METSO committee. 1) The work group for statistics on forest conservation (SUTI) collects, specifies and updates the data on the classification of forest conservation areas as well as prepares the launching of statistics on forest conservation. 2) The project concerning the basic information on forest conservation in Finland (SUME) produces new information on the relationship between forestry and forest conservation, with special emphasis on the conclusions of the existing studies and evaluation of their impacts from the perspective of the forest policy. The project also aims at constructing a plan for short-term research and development activities related to forest conservation. The project has contacts e.g. to the FIBRE programme and BITUMI project of the Academy of Finland as well as the SAVA project for the assessment of the representativeness of the conservation areas.

The appropriation for the maintenance and management of the existing conservation area network has been raised, but the funding is not yet on the target level envisaged in the National Forest Programme.

3.2 Restoration of forests and peatland

An expert work group for restoration of forests and peatland has been set up to secure the preservation of biological diversity of forests. The work group examines the need for restoration of forests and peatland in nature conservation areas as well as the related methods and organisation of the research and follow-up of restoration.

The tasks of the work group are:

1. To draw up a summary of the restoration projects conducted in Finland and the Finnish studies and monitoring concerning restoration.
2. To find out the key areas and possibilities in the restoration of forests and peatland in nature conservation areas as part of the development of the nature conservation network.
3. To examine the need for research and follow-up related to restoration.
4. To draw up a proposal concerning the implementation and coordination of the restoration of forests and peatland in nature conservation areas and the related research and follow-up.
5. To estimate the need for financing for restoration and the related research and follow-up.

The work group was to submit its proposal to the Ministry of the Environment by 31 May 2002.

3.3 Preservation of biotopes and species under the Nature Conservation Act

The inventory of biotopes referred to in the Nature Conservation Act has been continued in cooperation between the Regional Environment Centres and the Finnish Environment Institute, and both landowners and Regional Forestry Centres have been notified of the progress made. The protection of biotopes and species should be intensified by allocating adequate resources for the inventory and management of conservation areas, implementation of conservation measures as well as research and development. Special attention should also be directed at the practical cooperation concerning the biotopes and threatened species between the Environment and Forestry Centres. The third updated report of the threatened species of animals and plants in Finland was published in 2001. The report presents the need for research, protection and follow-up of threatened species in the near future.

3.4 Reducing environmental burden due to forestry

The environmental burden due to forestry, mainly on waters, should be reduced as set out in the target programme for water protection 2005 ratified by the Government on 19 March 1998. According to the environmental impact assessment concerning the National Forest Programme, the realisation of the target programme by means of the amount of work envisaged in the National Forest Programme is “a very challenging but not impossible task”. Based on the assessment, “the research concerning the nitrogen and phosphorus load must be continued, as well as increased especially for the part of the treatment of luxuriant peatlands and low lands.”

Two research and development projects were launched to support the realisation of the objectives. The project concerning the reduction of burden on waters due to forestry in riparian zones and seepage areas is implemented by the Finnish Environment Institute and Regional Environment Centres, while the Forestry Development Centre Tapio and Forestry Centres are conducting a project on the reduction and follow-up of the burden on waters.

3.5 Follow-up of biological diversity in forest ecosystems

Reliable follow-up data is needed on the biological diversity of Finnish forests and its current state. The work group for research, follow-up and data systems (TST) of the national action programme concerning biological diversity in Finland in 1997-2005 drew up a proposal for a follow-up system for biodiversity in forest ecosystems. The system is largely based on the existing follow-up systems (national forest inventory, threatened species, game triangles). All the most important research institutes and universities in Finland take part in the development of the follow-up. The project proposal was published in the first report of the TST work group at the end of 2001.

4. Administrative sector of the Ministry of Trade and Industry

Project group: *Tapio Lehtiniemi* and *Heikki Granholm* (Expert) (Ministry of Agriculture and Forestry), *Aimo Aalto* and *Reima Sutinen* (Expert) (Ministry of Trade and Industry) and *Ilmo Kolehmainen* and *Tage Fredriksson* (Expert) Forestry Development Centre Tapio

4.1 Energy policy supporting the development of forestry

Objective: Securing the supply of energy at a reasonable price for forestry as well as increasing domestic energy production and use of domestic bioenergy.

In the programme for promoting renewable sources of energy (1995-2010) the quantitative growth in the use of renewable sources of energy is mainly based on bioenergy, especially wood. Various kinds of by-products of the processing industry (waste liquor, bark and chips) play a central role in this, and their use proceeds mainly through the expansion of the related capacity and the degree of use, which are based on decisions made by the forest industry itself. Towards the end of the 1990s the use of wood energy grew as envisaged in the programme, and it seems that the 50 per cent increase (higher than the objective for firewood in the National Forest Programme) set as an objective by 2010 may be reached already before 2005. At the moment the development is slightly slower but quite steady.

In the budget for 2002 it is proposed that the investment subsidies of the Ministry of Trade and Industry, which are partly directed at the different stages of forest industry's wood energy production, be raised to the earlier level. New major plants using wood energy were completed

during 2001. Preparations were made to extend the wood energy technology programme (1999-2003) to concern small-scale production and use of fuels. One major project for securing the supply of energy at a reasonable price in the long term is the construction of a new 1,000-1,600 megawatt nuclear power unit.

At the Ministry of Agriculture and Forestry the means to increase the use of forest chips include the harvesting aid for energy wood from the tending of young stands as well as chipping aid, which have made the price of energy obtained from whole-tree chips competitive. Forest chips from regeneration areas have been competitive without any subsidies. The use of forest chips is on the increase, and in 2001 it exceeded 1 million m³. The State budget for 2002 included a number of proposals to increase the appropriations for promoting renewable sources of energy, communication on energy issues and investment aid.

4.2 Raising the degree of processing of wood product industry

Objective: Doubling the value of wood product industry's exports

The objective includes both the volume of exports and raising the degree of processing. Export calls for domestic references. At least partly due to the Time for Wood campaign implemented in 1997-2000 e.g. the consumption of domestic sawn goods rose to 0.9 m³ per capita in 2000, which is the highest in the world. The Sibelius Hall in Lahti was built as the flagship of the project, and several other projects were launched (modern wooden town, the biggest modern wooden bridge in Mäntyharju). The volume of the training of highly skilled designers and builders was also reinforced. The growing use of sawn timber in building has increased the manufacturing of houses and wooden constructions (including environmental constructions), doors, windows, interior decorations, furniture, etc., which means that the degree of processing has risen.

The work of the Time for Wood campaign is continued by the Wood Europe campaign 2001-2005 launched on 2 March 2001 in cooperation with e.g. the forest sector companies. The objective is to promote the mechanical use of wood in Europe, increase the export of wood products and secure the results achieved so far in Finland. The campaign organisation has developed the idea of setting up a programme for promoting wood building in Europe, with main emphasis on renovation and supplementary building. The programme would be based on outlines set out in Community positions concerning the sector as well as in the context of the UN (Rio Conference, Habitare, Kyoto process). The proposal was completed at the end of 2001.

4.3 International climate policy

The Convention on Climate Change and Kyoto Protocol include a clear incentive to increase the use of biomass for energy, because the emissions due to fossil fuels should be reduced. In other respects the role of carbon sinks, i.e. the role of forests and agricultural measures in the international climate policy, has been unclear since the negotiations on Kyoto Protocol in 1997. The negotiations of the Sixth Conference of the Parties or the UN Convention on Climate Change broke down in November, and they were continued in July 2001. At the Bonn meeting a political agreement was reached on the items that were open in the Kyoto Protocol. According to the Bonn agreement, the measures under Article 3.3 of the Kyoto Protocol concern the changes in the carbon pool caused by afforestation and destroying of forests and other greenhouse gas emission in 2008-2012. For the part of Article 3.4 an agreement was reached on allowing the parties to include the use and management of forests, management of agricultural land and restoration of vegetation in the efforts to reach the emission reduction set as the target.

In 2000 surveys concerning the different sectors were drawn up for the National Climate Strategy, and the survey on forestry was based on the National Forest Programme. The sectoral drafts were combined into a national Climate Strategy under the Ministry of Trade and Industry. The Government submitted its report to the Parliament in 2001, and according to the Parliament Statement, it is now possible to proceed in the climate strategy on a national basis. The implementation of the National Climate Strategy has started, and in the budget proposal for 2002 additional funding was proposed for measures under the strategy, such as energy saving and increasing the use of renewable sources of energy. The preparations for the peat research programme included in the strategy have also been started. Both the National Forest Programme and Agri-Environmental Programme make significant contributions to the National Climate Strategy, and the most important measures include the tending of young stands, harvesting and chipping of energy wood, as well as research and surveys.

4.4 Following the use of firewood

Objective: To create a follow-up method for the energy use of forest chips and use of wood in small houses.

Preliminary survey: "Statistics on the energy use of forest chips"

During 2001 the Finnish Forest Research Institute compiled data on the total use of forest chips in Finland in the previous year, and the use has been followed since then. In addition to the forest chips the statistics cover the energy use of the by-products of forest industry (various kinds of chips, sawdust, bark), recycled wood from building and demolition as well as pellets and briquettes. The project was designed in cooperation with the Ministry of Trade and Industry, Statistics Finland, Puuenergia ry (wood energy association), VTT Energy and TTS-Institute (Work Efficiency Institute). The results of the preliminary survey for the part of chips are presented in the Chapter "Profitability and employment in forestry, Use of wood for energy".

A survey conducted by the Finnish Forest Research Institute, funded jointly with the Ministry of Trade and Industry, was completed in the early part of 2002, and the study covers more than 10,000 locations where energy use takes place. Small-scale use of wood for energy should be monitored on an annual basis, because results of follow-ups every 5-10 years may give the impression that no development occurs in the short term.

5. Administrative sector of the Ministry of Social Affairs and Health

Project group: *Hannu Jokiluoma, Jouni Suoheimo*

5.1 Development of working conditions and occupational safety in the forest sector

Objective: Coordination and activation of development and communication relating to working conditions through national concerted action groups.

The Ministry of Social Affairs and Health and the Centre for Occupational Safety organised a joint event on occupational safety and health of the administration and labour market organisations, which covered the current state of working conditions, development needs as well as future measures. Training and information material in support of the development of working conditions has been produced and distributed especially through the Centre for Occupational Safety.

The development of working conditions as one way of reinforcing the social sustainability in the forest sector was the theme of a seminar held in the beginning of 2002. The seminar was organised in cooperation between the Ministry of Social Affairs and Health and the labour market organisations.

The Government Decree concerning occupational safety in the harvesting of wood has taken into account the recent development in forest work and legislation on occupational safety. The decree combines the earlier statutes on the instructions for organising the harvesting of wood and communication during this work. The Decree entered into force on 1 January 2002.

5.2 Monitoring the working conditions in the forest and wood product sector

Objective: Compilation of adequate data for the follow-up of the working conditions in the sector.

The compilation of barometers on working conditions has been started, funded by the Ministry of Social Affairs and Health. The practical work is done at the regional occupational health institute of Kuopio, in cooperation with the labour market organisations as well as relevant institutes and authorities. The results of the barometer are completed during 2002, and the work can then be continued on a regular basis.

Factors influencing the willingness to continue in forest work and as forest machine operator have also been studied at the regional occupational health institute of Kuopio.

5.3 Job satisfaction in the forest sector

Objective: Promoting job satisfaction among the people employed in the forest sector

There is a project directed at private forestry, which is carried out by means of part-financing from the research and development programme concerning job satisfaction included in the Government programme. The organisations of the sector have contributed to disseminating the experiences gained from the project. Job satisfaction has been widely discussed at various kinds of work contexts and labour market organisations have made significant efforts to promote job satisfaction, also in the forest sector.

6. Administrative sector of the Ministry of Labour

Project group: *Pekka Tiainen* (Ministry of Labour), *Marja Hilska-Aaltonen* (Ministry of Agriculture and Forestry) and *Kirsi-Marja Korhonen* (Forest and Park Service)

6.1 Development of the tending of young stands as an employment measure

Objective: To remove the administrative obstacles to forest management work subject to the conditions of employment measures under the Act on the Financing of Sustainable Forestry.

The Act on the Financing of Sustainable Forestry was amended in 2001 so that State assistance governed by the Ministry of Agriculture and Forestry may be used for the tending of young stands by unemployed labour force to promote the sustainability of wood production. The amendment entered into force on 15 May 2001. The Ministry of Labour issued a decree on the recruitment procedure for this kind of work.

7. Administrative sector of the Ministry of Education

Project group: *Seppo Niinivaara* (Ministry of Education), *Heikki Pajuoja* (Finnish Forest Research Institute) and *Jouni Suoheimo* (Ministry of Agriculture and Forestry)

7.1 Training of workers for the forest sector

Objective: Annual training of forest machine operators, log truck drivers and forest workers based on the need.

The Ministry of Education has developed apprenticeship contracts to meet the demand of the working life. In the forest sector the training meets the need better than earlier.

7.2 Development of higher training in mechanical wood processing

Objective: Development of higher level training in mechanical wood processing into a more attractive alternative to young people making their career choices.

The Ministry of Education has collaborated with the polytechnics to develop training programmes in wood technology into larger entities to make them more interesting for the applicants as well as to meet the needs of working life.

7.3 Youth work and forest education in schools

Objective: Education concerning forests in schools and youth work is developed into a more significant task of the forest organisations.

A development project coordinated by the Ministry of Agriculture and Forestry, which was started by joint discussions in January 2000. Resources of the Ministry of Agriculture and Forestry and Ministry of Education have been directed at supporting education at schools and youth work through projects undertaken e.g. by the Finnish 4H Federation, Forestry Development Centre Tapio, Finnish Forest Association and Forestry Centres. The projects include the “opportunities in forests”, “forest learning path”, “Savotta 2000” and “forest responds”.

7.4 Development of international education in the forest and wood sector

Objective: On the submission of the Working Committee of the National Forest Programme 2010, the Ministry of Education sets up a work group to find out how the secondary and higher level education in the forest and wood sector prepares for international activities and increasing international contacts as well as, in the case of university education, supports the development of teaching in international forest policy.

In March 2001 the Ministry of Education appointed a broadly based work group. Later on the Ministry extended the term of the group until 31 May 2002.

7.5 Cultural heritage of forests

Objective: Sites with cultural and historical value are taken into account in forestry in a coordinated way.

The expertise of the National Board of Antiquities and regional museums has been used in the planning of forest management of all forest owner categories as well as in drawing up regional forest programmes. The Ministry of Agriculture and Forestry and the National Board of Antiquities are drawing up common instructions for appropriate procedures.

8. Administrative sector of the Ministry of Traffic and Communications

Project group: *Kalevi Karhu* (Ministry of Traffic and Communications), *Marja Hilska-Aaltonen* (Ministry of Agriculture and Forestry), *Ilmo Kolehmainen* (Forestry Development Centre Tapio) and *Harri Rumpunen* (Finnish Forest Industries Federation)

8.1 Maintenance of lower-level road network

Objective: Keeping the lower-level road network in such a condition that it can be used for forestry and forest industry transportation.

The Act on the Financing of Sustainable Forestry was amended so that the construction of a forest road may also refer to basic improvement of a private road needed for forestry transportation independent of how the building of the road was funded. The amendment entered into force on 15 May 2001. The Government Decree of 1 January 2001 lays down the maximum share of assistance to be granted for basic road improvement, which may be 40, 50 or 60 per cent depending on the support zone. In the construction of new roads the share of support may be 20, 30 or 40 per cent.

9. Administrative sector of the Ministry of the Interior

Work group: *Marja Kokkonen* (Ministry of Agriculture and Forestry), *Helena Merisaari* (Ministry of Agriculture and Forestry), *Kaisa-Leena Lintilä* (Ministry of the Interior) *Pekka Urjanheimo* (Ministry of the Interior), *Ilkka Korhonen* (Ministry of Trade and Industry), *Harri Martikainen* (Ministry of Education), *Jukka Ristaniemi* (Ministry of Labour), *Matti Suihkonen* (Pohjois-Savo Forestry Centre)

9.1 Follow-up and feedback of regional development

Objective: Implementation of the forestry and wood sector measures of the Objective 1 and 2 Programmes and the Objective 3 Programme as well as Regional Rural Development Programme. Promoting and monitoring the realisation of the measures concerning forestry and wood-products sector in the programmes.

To facilitate the follow-up, the work group divided the objectives of the National Forest Programme 2010 into five groups:

- a) increasing the annual use of domestic roundwood in the processing industry and raising the value of wood industry's exports
- b) increasing the use of energy wood
- c) increasing the total investments in silviculture and forest improvement
- d) improving the ecological state of forests

e) improving forest know-how and innovation

The common objectives in all programmes implemented during the programming period 2000-2006 include the efforts to reduce the differences in the development between regions, creation and preservation of jobs as well as improving employment, know-how and the environment. Each programme as well as the regions implementing the programmes may select the specific key areas which receive more emphasis. The forest and wood sector is one of the most important key areas.

The Regional Rural Development Programme is the only programme where there is a separate financial framework for the forest and wood sector measures. The share of these in the public funding is 18 per cent, totalling €71 million in the whole programming period. The objectives of the forest measures under the Regional Programme include improving the productive capacity of forests, promoting sustainable use, adequate supply of wood raw material and business activities and use of wood for energy as well as developing cooperation and networking in the sector. The programme also emphasises the need to improve the know-how among the forest owners, entrepreneurs and expert organisations. The means to reach these objectives are development projects part-financed from the EAGGF as well as support for the investments, start-up and development of companies.

The Objective 1 and 2 Programmes aim at diversifying the economic activities, establishing new enterprises and developing the existing ones, improving the quality of the environment, as well as raising the level of know-how and securing the availability of related services. Development projects and investment and development aid for enterprises (ERDF, ESF) promote the growth, competitiveness and internationalisation of enterprises, development of company networks and clusters, use of information and other technology, and innovation and product development. The key areas include the use of renewable sources of energy and improving the logistics and marketing. Services to improve the know-how are supported by means of financing for incubators and centres and concentrations of expertise. Development projects financed under the ESF also promote the know-how of entrepreneurs and company managers and staff, training of entrepreneurs, increasing the knowledge on quality and environmental issues as well as apprenticeship and learning at work.

The Objective 3 Programme funded under the ESF aims at utilising the demand for labour and promoting employment, improving the quality and efficiency of training and reinforcing the links between training and working life. The programme also emphasises the development of know-how as a resource in support of entrepreneurship, reform of the working life and utilisation of research results and technology. The forest sector measures are largely the same as those implemented under the Objective 1 and 2 Programmes by means of ESF funding.

By 30 September 2001 the different administrative sectors and municipalities had financed projects relating to measures set out in the National Forest Programmes by altogether €75.3 million. The EU contributed on average 43.3 per cent of the public funding. The share of municipalities rose to 5.6 per cent, i.e. €4.4 million. Public sources accounted for 31 per cent of the total funding.

A major share of the funding was used for various kinds of investment and development projects for enterprises. About 95 per cent of the support for enterprises is directed at wood processing and forestry services and about 5 per cent is used for increasing the use of wood for energy. 69 per cent of the activities are directed at increasing the annual use of roundwood and value of wood industry exports. There are also a number of projects for promoting the haulage of wood from forests to the appropriate user, wood processing and export. Regional theme and work programmes for the forest and wood sector have been drawn up. 12.4 per cent of the assistance was granted for investments

and development projects concerning the use of wood for energy. Development projects have been concerned with issues relating to the harvesting and use of energy wood, such as different uses, profitability and forms of cooperation. No projects have been funded under the Objective 2 Programmes.

Only 0.5 per cent of the funds have been used for promoting the ecological sustainability and multiple use of forests. Multiple use is promoted through various projects concerning the utilisation and processing of natural products as well as tourism. The share of funding for forest know-how and innovation was 13.8 per cent. Under the Objective 3 Programme funding has been directed at the anticipation of the needs for training in the forest sector, methods and tools for supporting and promoting learning at work, training of instructors for places of work as well as development of contacts between the schools and working life.

The Objective 1, 2 and 3 Programmes as well as the Regional Rural Development Programme offer a wide range of financing possibilities for promoting the forest and wood sector, and these opportunities have been taken advantage of quite well. Each region and Employment and Economic Development Centre selects its own key areas in the use of funds. One very positive aspect in the use of programme funding is that the whole chain from the stump to the market has been taken into account in the development work, which was reflected e.g. in the financing of the work and theme programmes, i.e. coordination projects. In many areas the theme programmes and regional forest programmes have also been harmonised so that the same cooperation partners are involved in their preparation. The harmonisation of these programmes and individual projects is going to be increasingly important in the future. The high share of company projects indicates the important role of financing which directly leads to the creation of new jobs. The innovative elements and utilisation of the most recent information in companies calls for further study.