

Future Review for the Forest Sector –

Outline of the Forest Council concerning
focuses and aims for the forest sector



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Preface

The Future Review for the Forest Sector is the statement of the Forest Council concerning the focuses, aims and actions that are important for the future of forests and forest-based businesses. The review centres on government activities while emphasising the importance of the private sector and other interest groups in achieving the aims.

The forest sector can increase national well-being in many ways. As a renewable natural resource the forests provide nearly unlimited opportunities for new high-technology innovations that are efficient from the point of view of the national and regional economy, profitable from the point of view of private economy, ecologically sustainable and socially acceptable.

The outlines have been drafted in work groups summoned by the Forest Council and in its secretariat. The statements have been discussed in various seminars and interest group meetings. The extensive study commissioned from the Finnish Forest Research Institute, "The Contribution of Finland's Forests to National Prosperity and Well-being in 2015 – A Report on Finnish Forest Sector Development and Future Scenarios", the work of the Future Forum on Forests and the Forest Academy for Decision-Makers and the regional forest programmes completed in early 2006 have provided important background material for the future review.

The aim is to continue the revision of the National Forest Programme based on this future review in such a way that the Council of State could adopt the revised National Forest Programme 2015 and the continuance for the closely related Forest Biodiversity Programme for Southern Finland (METSO) in the end of 2007.

Changes in the operational environment create large challenges for the forest sector. A proactive attitude, active measures and a common will are required to meet these challenges. Already at this point it can be stated that the outlines of National Forest Programme 2015 will be based on the will to continuously reshape and develop the forest sector.

I wish to express my warmest gratitude to all those involved in the work for this future review.

Helsinki, 2 October, 2006

Juha Korkeaoja
Minister of Agriculture and Forestry

Summary

Globalisation of the world economy, tougher competition in the forest sector, interest in products based on renewable natural resources, challenges in the production of energy, climate change and the importance of forests as a source of recreation and health are central forces of change affecting the Finnish forest sector.

The forest cluster is one of the most important concentrations of expertise in Finland. Know-how, innovations, new development, top-level research, versatile education and utilisation of research data occupy key positions.

The forest sector holds a significant opportunity to promote sustainable development and well-being in the entire society.

The Future Review for the Forest Sector is the statement of the Forest Council¹ concerning future focuses and aims. The review centres on government activities but also describes the significance of the private sector and other interest groups for development of the forest sector.

Ensuring competitiveness and ample and biologically diverse forest resources is crucial for the future of the forest sector. The development focuses on

- ample, healthy and varied forest resources;
- competitive operational conditions for the developing forest industry;
- forestry as a profitable business;
- forests that support regional development, employment and entrepreneurship;
- ecologically sustainable management and use of forests;
- forests that provide a source of culture and recreation;
- a strong system of expertise that promotes renewal of the forest sector;
- international forest policy that promotes sustainable forestry.

The aim of forest use is to utilise the various possibilities of forests and to harmonise the different forms of forest use. According to the most recent National Forest Inventory the fellings in Finnish forests can be raised to the level of 65–70 million cubic metres per year in a sustainable way while the forest resources continue to increase, the forests stay in good health and the biodiversity and cultural and recreational values of the forests are looked after.

The forest sector will occupy an important role with regard to viability of rural areas also in the future. Utilisation of the sustainable felling potential and silvicultural and forest improvement operations strengthen the business activity in the forest sector. There is a growing business potential in forest energy, nature travel, further processing of organic products and business based on health-related forest products and services. The growth potential in the forest industry centres on customer-oriented products with a high processing degree and on entirely new products. New opportunities for products based on wood raw material are created as the significance and appreciation of sustainable development increase. The growth potential is especially great for the use of wood in construction.

The significance of renewable natural resources is growing. Consequently, more resources are needed for management of the forests and their biodiversity, infrastructure as well as research and development activity within the forest sector than in the early years of the millennium. There is a need for increase especially in the domains of the Ministry of Agriculture and Forestry, Ministry of Trade and Industry and Ministry of Transport and Communications. In the field of the Ministry of the Environment and the Ministry of Agriculture and Forestry, funding for the continuation of the Forest Biodiversity Programme for Southern Finland (METSU) should be secured.

Other important sources of financing include the financing by the Ministry of the Interior for regional development, research funding by the Ministry of Agriculture and Forestry and the Ministry of Education as well as funding for education in the forest sector. The Future Review also includes action proposals for revising tax legislation.

¹ The task of the Forest Council is to support the Ministry of Agriculture and Forestry in wide-reaching and fundamentally important forest policy issues, to monitor the realisation of National Forest Programme 2010 and to revise the programme. The Forest Council has 23 members.

1 Forests provide new and sustainable solutions for future challenges

Globalisation of the world economy, tougher competition in the forest sector, interest in products based on renewable natural resources, challenges in the production of energy, climate change and the importance of forests as a source of recreation and health are central forces of change affecting the Finnish forest sector.

The forest sector occupies a significant role in promoting sustainable development. The solutions in a society of sustainable development shall be economically profitable, ecologically and culturally sustainable as well as socially acceptable. The vision of National Forest Programme 2010 – Sustainable well-being from diversified forests – is still current and also more challenging as the operational environment changes.

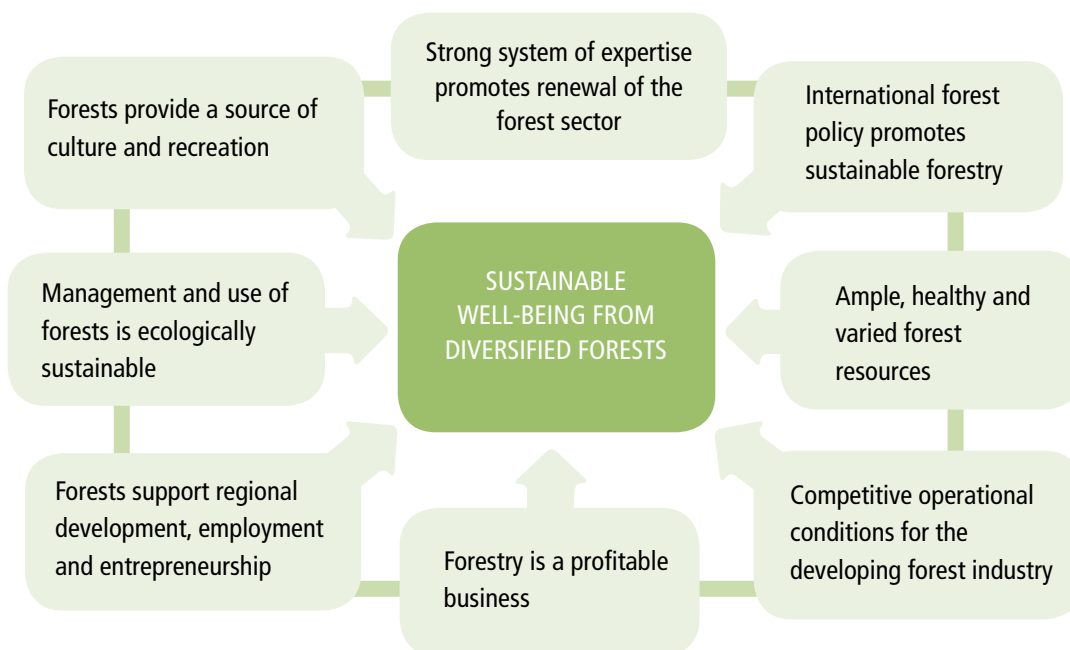
The forest cluster is one of the most important concentrations of expertise in Finland. Restructuring of the forest cluster and its competitiveness are important for the Finnish national economy and prosperity. Know-how, innovations, new development, top-level research, versatile education and utilisation of research data hold key positions. In order to respond to the changes in the operational environment the forest sector should be developed as a whole in such a way that the value chains of production from the forest to the market are competitive and profitable.

The aim of forest use is to benefit from the versatile opportunities provided by the forest. Long-term policies, cross-sectoral cooperation and active involvement of the interest groups are required to harmonise different forms of forest use. Initiative in international forest policy is also needed since forest issues are simultaneously both local and global.

Growing, vital and biologically diverse forests are a national asset. Their importance is emphasised in a society based on sustainable development. The forest resources of Finland and their growth enable versatile use of our forests. The forests provide high-quality raw material for present and future products of the forest industry, employment and livelihood. They also enable many other uses of the forest that are important for the well-being of people while simultaneously ensuring biodiversity of the forest nature. The forest sector occupies a central role with regard to viability of rural areas and balanced regional development.

The social significance of the forest and forest products is greater in Finland than in any other industrial country. The following items are important for the well-being of Finns

- the forest resources are ample, healthy and varied;
- the operational conditions for the developing forest industry are competitive;
- forestry is a profitable business;
- the forests support regional development, employment and entrepreneurship;
- management and use of forests is ecologically sustainable;
- forests provide a source of culture and recreation;
- a strong expertise system promotes renewal of the forest sector;
- international forest policy promotes sustainable forestry.



2 Operational environment of the Finnish forest sector

2.1 National significance of the forest sector and change factors of the operational environment

The share of the forest cluster¹ built around wood processing is nearly 10 per cent of the Finnish gross domestic product, about 30 per cent of industrial production and nearly 40 per cent of net export income. The entire cluster employs about 200 000 persons. The significance of the forest cluster is emphasised by the fact that the production of the forest industry is largely based on domestic renewable raw material resources, domestic processing, know-how and machinery and equipment manufacturing.

The core of the forest cluster consists of a strong forest industry and profitable forestry. Success of the forest industry affects the development possibilities of all the other branches in the cluster. Its share of the gross domestic product together with forestry is about six per cent and of the industrial production one fifth. The turnover amounts to about 20 billion euro. Exports of the forest industry – valued at about 12 billion euro –

amount to more than one fifth of the total Finnish exports. About three quarters of the value of the production of the forest industry are products of the pulp and paper industry and the rest are products of the wood products industry (see Appendix 1, central forest statistics).

The forest sector plays a central role with regard to viability of rural areas. The extensive Finnish forest resources and the forestry, forest industry and other business based on them provide an important asset for balanced regional development. The annual income of private forest owners from sales of timber has averaged 1,5 billion euro in recent years. Two thirds of this income is accrued in the municipality where the forest is situated. The value of firewood and forest chip was 122 million euro in 2005 and the total value of other products, such as forest game, wild berries and mushrooms, reindeer husbandry and Christmas trees was more than 200 million euro. Nature travel is a growing business with significant impacts on the local and regional economy. The effects of nature travel on employment were estimated² to be about 20–30 000 person years in 2002 with added value of about half a billion euro.

The benefits resulting from forest biodiversity are typical public goods, the social and economic advantages of which are largely based on the experienced increase in the well-being of citizens and consumers. Sustainable development and national treaties require management of ecological sustainability. The forests uptake carbon thereby slowing the greenhouse effect for their part and affecting the quality of waterways and ground water.

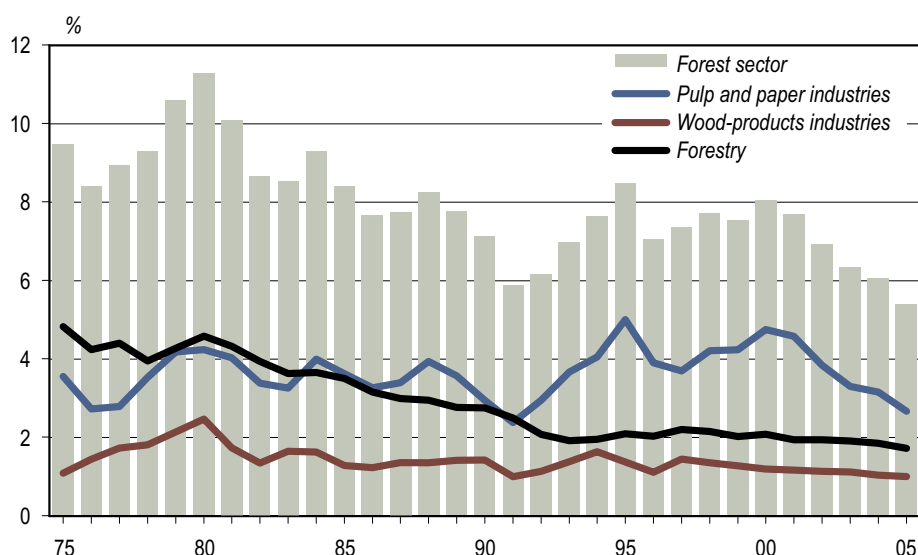


FIGURE 1. Share of the forest sector of gross domestic product 1975–2005

Years 2004 and 2005 are pre-estimates.
Source: Statistics Finland

¹ In addition to forest industry and forestry, the forest cluster includes machine and equipment manufacture, chemical industry and research, development and consulting activity.

² Koivula, E. and Saastamoinen, O. (edit.). 2005. Näkökulmia luontomatkailuun ja sen tulevaisuuteen (Views on the Future of Nature Travel). University of Jyväskylä, Future Forum on Forests. Nature travel means in this context all travel relying on nature.

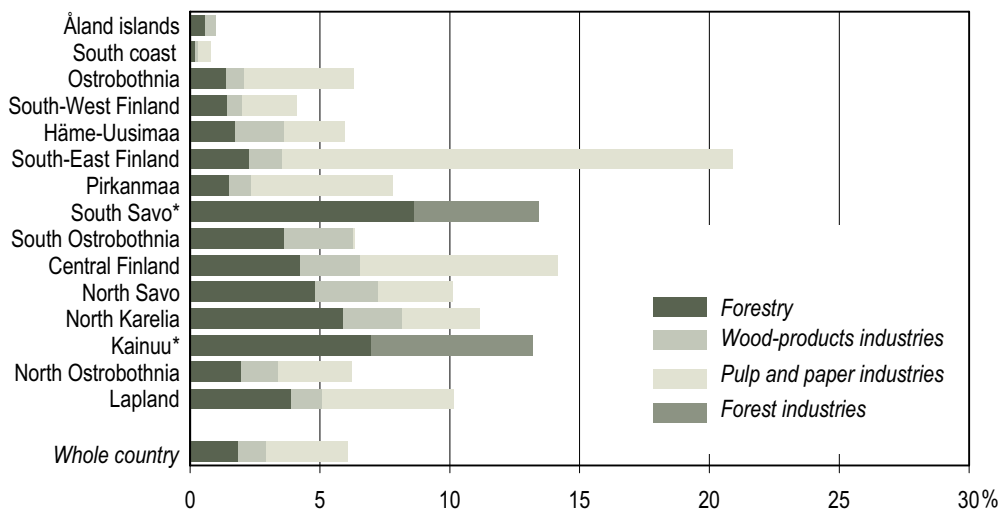


FIGURE 2. Share of the forest sector of gross domestic product by forestry centre in 2004

* No information available per branch due to data protection.
Source: Statistics Finland

The operational environment of the forest sector is undergoing a worldwide change. The economy and production are globalising, the aims of the forest owner are changing and international treaties regulate the activities to an increasing degree. The significance of forests as a recreational, tourist and cultural environment is predicted to grow. The climate change and securing of biodiversity of nature are more and more topical issues both internationally and nationally. Aging and urbanisation of the population have a large impact on the availability of labour and on people's values.

Future development of the forest sector has been forecast in recent times e.g. at the Future Forum on Forests³ and in the extensive study of the Finnish Forest Research Institute on the development outlook for the Finnish forest sector⁴. The increasing forest resources, largely modern production technology, solid know-how and a forest cluster and society that support the production maintain favourable development prospects for the forest industry in Finland. On the global forest industry market consumption of the products is growing slowly or not at all in the OECD countries but rapidly in many Asian countries, in Russia and in East Europe. The rapid growth in the Russian and neighbouring markets may provide opportunities to increase exports. The growth potential for the production located in Finland lies in products with a high processing value and in new products. Actions for increasing the competitiveness of domestic wood are especially important. Services linked to the forest, such as silvicultural and forestry services, management of forest nature, nature travel and harvesting of forest energy are grow-

ing branches of rural business. The use of wood for energy includes considerable growth potential.

Of international treaties and EU regulations the Forest Strategy, Forest Action Plan, Biomass Action Plan, Biofuel Directive and the Rural Decree play an important role in the development of the forest sector. The Water Framework Directive, Biodiversity Strategy, criteria for public procurement and the action plan concerning illegal logging (FLEGT) create an environment for conducting business. The Millennium Declaration of the UN in 2000 and the World Summit on Sustainable Development in Johannesburg in 2002 confirmed the general principles of sustainable development that also apply to the development of the forest sector.

On the national level the most important political sector strategies and programmes are e.g. the Government Report on Energy and Climate Policy, Natural Resources Strategy, National Strategy for Sustainable Development, Strategy and Action Plan for Preservation of Biodiversity and Sustainable Use of the Finnish Nature 2006–2016, Rural Development Strategy, Research Strategy of the Finnish Forest Cluster, Centre of Expertise Programme 2007–2013, Regional Centre Programme 2007–2010 and the Decision by the Science and Technology Policy Council on Strategic Centres of Excellence.

2.2 Realisation of National Forest Programme 2010

National Forest Programme 2010 has been adopted by the Council of State and has contained the central outline of forest policy since 1999. The aim of the programme is to promote economically, ecologically and socially sustainable use of forests. The extensive programme has been realised in the same spirit of open cooperation that already prevailed during its drafting. According to the performed evaluations the programme as a whole has functioned well.

3 Niskanen, A. (edit). 2005. Menestyvä metsäala ja tulevaisuuden haasteet (Successful Forest Sector and Future Challenges). Kustannusosakeyhtiö Metsälehti.

4 Hetemäki, L., Harstela, P., Hynynen, J., Ilvesniemi, H. and Uusivuori, J. (edit.) 2006. Suomen metsiin perustuva hyvin-vointi 2015. Katsaus Suomen metsäalan kehitykseen ja tulevaisuuden vaihtoehtoihin (The Contribution of Finland's Forests to National Prosperity and Well-being in 2015 – A Report on Finnish Forest Sector Development and Future Scenarios). Working Papers of the Finnish Forest Research Institute 26.

	Starting point 1998	Objective 2010	Status 2005
Roundwood removals [mill.m ³ /y]	58	63–68	59
Silvicultural investment [mill. €/y]	196	270	222
Net result of private forestry [€/ha/y]	113	112	89
Use of forest chip [mill.m ³ /y]	0,8	5	3,0
Exports by wood products industry [bill. €/y]	2,9	4,6	2,6
Exports by forest sector [bill. €/y]	12,8	14,4	10,9

TABLE 1: National Forest Programme 2010 – main objectives and status in 2005.

Figures in euro quoted in monetary value of 2005.

Investment into silviculture, use of forest energy, employment in the forest sector and the pilot phase of the Forest Biodiversity Programme for Southern Finland (METSU) have progressed along the aims. The status of specially important habitats in commercial forests has been maintained well. International forest policy has led to positive results. Recreational use of forests has increased. The forest cluster is an internationally strong and competitive concentration of excellence.

However, not all the aims have been met due to the changes in the operational environment of the forest sector. The use of domestic wood, profitability of forestry, exports of the wood products industry, ditch cleaning and first thinnings have all lagged behind the aims of the programme. Internationalisation of the forest industry and its measures to secure the supply of raw material have affected the demand for domestic wood. Tougher international competition on the market for the end products has also reflected on the timber market. The profitability of forestry has even been eroded by the drop in the real stumpage prices. The measures for ensuring biodiversity of the forests have been right but insufficient⁵.

The volume of production of the wood products industry, its domestic use and processing value have increased but the slow economic growth of the important export countries in Central Europe and the decline in the real prices caused by a surplus supply of the products have kept the value of exports at a lower level than aimed for. Realisation of first thinnings and ditch cleanings has been hampered by the weak demand for the timber resulting from the thinnings.

Employment in the forest sector has developed more favourably than anticipated. When the programme was approved, employment in the sector was predicted at about 80 000 man years in 2010. In 2005 the employment figures totalled about 92 000 man years, mainly thanks to the positive development in silvicultural work, in the use of wood for energy and in the wood products industry.

2.3 Regional Forest Programmes 2006–2010

The Forest Act and Decree of 1997 require each forestry centre to draft a regional forest programme for its operating region in cooperation with the regional interest groups and to monitor its realisation. In 2005 all 13 forestry centres in Finland revised their forest programmes for 2006–2010. The programmes contain the regional focuses, needs, aims and actions for economically, ecologically and socially sustainable use of forests. The programmes will be utilised when revising the National Forest Programme and they will, in turn, be fine-tuned when the revised National Forest Programme 2015 is adopted.

The aims set in the regional forest programmes vary from one forestry centre to the next because the position and possibilities of the forest sector are different in different regions. In summary it can be stated that the aims for commercial roundwood removals are clearly larger than before and the aims for thinnings, tending of seedling stands and ditch cleanings that are important for the timber production capacity of the forests have been raised significantly. Considerable growth potential is seen in the use of forest energy.

The programmes wish to address nature management in commercial forests and development of forest biodiversity mainly through the new means of protection tested in the METSU programme. Good development potential is seen in further processing of wood and in other business based on the forests.

The main aims and action schemes of the regional forest programmes are presented in more detail in Appendix 2.

⁵ Hildén, M., Auvinen, A.-p. and Primmer, E. (edit.). 2005. Suomen biodiversiteettiohjelman arviointi (Evaluation of the Finnish Biodiversity Programme). Suomen ympäristö 770.

3 Focuses for development of the forest sector

3.1 Ample, healthy and varied forest resources

The objective is to increase the growth of forests from the present level and to enable sustainable use of the forests through good quality, health and variance of the forest resources.

Ample, biologically diverse and high quality forest resources enable versatile use of the forests for timber production, recreation and for ensuring biodiversity. High-quality timber raw material is the basis for the operation of the forest industry. Viable forests secure the balance of the ecosystem and provide a means to prepare for expected or unexpected environmental changes in the future (see Section 3.5).

The annual increment of the growing stock is 97 million cubic metres according to the 10th National Forest Inventory. Out of this figure 94 million cubic metres grow in commercial forests. However, the maximum sustainable felling potential is much smaller due to the fact that most of the growth is in young stands. The calculations show a felling potential of slightly more than 66 million cubic metres per year during 2005–2014 and slightly more than 70 million cubic metres per year in 2015–2034. Positive development of the growth and felling potential requires quantitative and qualitative management of the silvicultural and forestry needs of the forests. In 2005–2014 the need for tending of seedling stands is 1,6 and the need for first thinnings 2,2 times the level of realised operations in the last decade.

Health of the forests has remained rather good but more threats will arise in the future. The climate change is predicted to increase the risk for storm, snow and insect damage. We must prepare to prevent both domestic pests, such as root-rot, pine and spruce weevils and elk and deer, as well as possible pests spreading from abroad.

Variance of forests refers to the wide selection of grown tree species, structural and scenic variance in the forest patches and internal variance within the forest. Variance adds to the recreational and scenic values of the forest and gives future generations a wider choice concerning the use of their forests. In forestry, this means using various management alternatives, tree species and methods according to the growth site.

Meeting the objective requires e.g. an increase in the amount of silviculture and number of forest improvement operations as well

as management of the quality of silvicultural and forestry operations and forest regeneration. The most important types of work are tending of seedling stands, improvement of young stands, ditch cleaning and harvesting of energy wood (see Appendix 2). The increasing amounts of work require raising of the mechanisation degree of the operations. The need for financing according to the Act on the Financing of Sustainable Forestry will be much higher than at present. The financing will also support the profitability of forestry (see Section 3.3).

Meeting the aim is promoted by training forest professionals, giving advice to forest owners and by forest management planning. Forest tree breeding strives to ensure a continuous supply of genetically high-quality raw material for forest regeneration in various parts of the country and for various sites and changing conditions. A national programme is needed for holistic care of peatland forests. Tax incentives for promoting forest management are constructed.

Elk and deer populations are maintained at sufficiently low levels with regard to the needs of forestry. Forest damage is prevented in advance and curbed by control, monitoring and by the right silvicultural and regeneration methods.

3.2 Competitive operational conditions for the developing forest industry

3.2.1 Effective utilisation of the increasing felling potential

The objective is to utilise the felling potential of the forests in the entire country considering sustainability and economic aspects.

In 2001–2005 commercial roundwood removals for domestic wood⁶ reached an average of 56 million cubic metres, in other words 85 per cent of the maximum sustainable felling potential. According to calculations by the Finnish Forest Research Institute the annual roundwood removals could be sustainably increased to more than 66 million cubic metres in 2005–2014 and in the decade after that to more than 70 million cubic metres⁷.

The forest industry used on average 71 million cubic metres of domestic and imported roundwood in 2001–2005. The present demand and the estimates for an increased future demand for roundwood in the forest industry lay the foundation for utilising the felling potential more effectively than at present.

⁶ Commercial roundwood includes commercial roundwood removals, wood for household purposes, wood for small sawmills and the part of firewood that meets the criteria for industrial roundwood.

⁷ The estimates are based on the current surface of protected areas and the forest management recommendations valid until July 31, 2006.

Moreover, possible changes in the availability of imported roundwood reflect quickly into the demand for domestic wood.

A functioning roundwood supply is a basic requirement for the operation of the forest industry in the long term. Private forests hold a key position here, since nearly two thirds of the roundwood used by the forest industry in Finland is purchased from private forest owners. The significance of the forests of Metsähallitus for the roundwood supply is greatest in North and East Finland.

The activity of forest management and use is largely affected by the profitability of forestry and the marketing of silvicultural services suited for different forest owners. The structural change in forest ownership and the increasing economic significance of peatland forests and forests requiring thinning for forestry create a challenge for the use of forests.

Questions concerning the roundwood markets remain to be settled between the relevant parties. Nevertheless, measures by the State and cooperation within the forest sector can promote utilisation of the felling potential considerably.

Meeting the objective requires a strong input into advisory services supporting forest management, forest use and production of roundwood for the market as well as efficient utilisation of the regional forest management planning data. Ensuring general approval for forestry through e.g. harmonisation of different uses of forests and active communication will be more important in the future. A clearer tax deduction system for supporting the forest owners in active and long-term forestry should be aimed for. The measures that improve the profitability of private forestry also facilitate utilisation of the felling potential (see Section 3.3).

3.2.2 Maintenance of the transportation networks

The objective is to maintain and develop the transportation networks in such a way that it is possible to transport for forestry and the forest industry all year round at a competitive cost.

An effective and competitive logistic system for the forest industry requires comprehensive and well-maintained transportation networks (roads, bridges, railways, waterways). Harvesting and transportation of roundwood for processing requires a transportation network that is operative all year round.

Rural roads should also be maintained in order to provide for the traffic of silvicultural and forestry operations and in general for the rural population and business. The road network also serves those wishing to use the forests for recreation.

Meeting the objective requires a significant increase in the financing for development and maintenance of the road and rail-road network. This falls within the domain of the Ministry of

Transport and Communications. It is necessary to increase public support for private roads in parallel with development of road management and maintenance (for example road manager services). The focus in maintenance of forest roads is on basic improvement.

3.2.3 Supply of energy at a competitive price

The objective is to provide energy for the forest industry in Finland at a competitive price and that the forest industry should realise the climate political agenda for its part.

The energy costs of the forest industry and the companies serving it have risen quickly, due to e.g. changes in the electricity market, increase in the price of oil and the greenhouse gas emissions allowance trading directive of the EU that aims for a reduction in greenhouse gases. This has increased both production costs and transportation costs for raw materials and products.

The share of wood-based fuels of the total consumption of primary energy in Finland is currently about one fifth, and 80 per cent out of this originates from byproducts of the forest industry. The aim of the forest industry is to process the roundwood raw material profitably as far as possible and to utilise the byproducts of this manufacturing process in the best way possible as energy, chemicals and materials. Energy-efficient solutions are aimed for in the development of the production systems.

Meeting the objective requires e.g. that the agenda of the Government Report on Energy and Climate Policy is realised and that these actions sustain the operational conditions for the forest industry. International climate negotiations aim for solutions where the reduction of emissions is effected worldwide. It is important to take into consideration the challenges of international competition in the allocation plan for emission rights for 2008–2012.

The use of wood-based energy is enhanced and biorefinery plant technology is developed. Research and development funding in the field of the Ministry of Trade and Industry as well as tax solutions will be used in this development work.

3.2.4 Development of new products and services and increase of the processing value of products

The objective is to utilise wood in an increasingly versatile way for competitive and customer-oriented products and services.

The growth potential of the production of the forest industry centers increasingly on customer-oriented products with a high processing value and on entirely new products. This calls for a more comprehensive knowledge of the raw material properties of wood and also of the means for shaping and utilising these properties. The profitability of existing products is improved by more effective production and further development of the tech-

nology. New possibilities for products from wood raw material are created as the significance and appreciation of sustainable development increases. The use of wood for construction offers an especially large growth potential.

New energy, chemical and food products are created alongside the developing paper, cardboard and wood products industry. Wood has a significant role in these new products that are processed either by companies in the forest industry or by their cooperating partners. Bioenergy and processed bioproducts provide the Finnish forest industry with the largest new opportunities for expansion of business, creation of new jobs and exports of technology.

Meeting the objective requires an increase in the public and private funding for research and development. The research strategy of the Finnish forest cluster is executed and centres of expertise supporting further processing of wood are financed (see Section 3.7). Networks and know-how for research, education, development, production activities and marketing are developed. Special emphasis is placed on know-how over the entire value chain from the forest to the market, in order to support small and medium-sized enterprises. The Woodworking Industrial Programme (2004–2010) and the Wood Construction Development Programme (2004–2010) are continued.

Raising of the processing degree of the forest sector, new research targets, utilisation of the regional strengths, increasing of the business and logistics know-how and strengthening of the marketing and cooperation networks require input from the individual companies but also channelling of the business and development project support granted by the regional employment and economic development centres and by the Finnish Funding Agency for Technology and Innovation (Tekes), into businesses in the forest sector.

The depreciation rights of businesses should be maintained at least on the present level to secure efficient introduction of new technology in the forest industry and in the companies serving it.

The demand for the products of the forest industry in the export market is promoted by developing the present forest certification systems through wide-based cooperation.

3.3 Forestry is a profitable business

3.3.1 Increase of the use of domestic wood and improvement of the cost-efficiency of forestry

The objective is to improve the cost-efficiency of forest management and wood procurement and to ensure versatile utilisation of all wood entering the market all over Finland.

Ensuring competitiveness of the forest industry located in Finland and renewal of its production capacity and development of new ways to use wood are essential for the use of domestic

wood. Growth in the production of wood-based energy and development of the energy wood market increase the demand for domestic wood.

According to the 10th National Forest Inventory the forest resources and their growth enable an increase in the use of wood. There is special potential to increase fellings of small diameter timber and the use of pinewood. The volume of imported timber has nearly tripled from the mid-1990s to more than 20 million cubic metres.

Profitability of forestry and the related expectations play a crucial role in the willingness of the forest owners to invest in silviculture and forest improvement. Profitability is first and foremost affected by the price and volume of sold timber, but profitability can also be improved by developing the work methods of silvicultural and forest improvement operations and timber harvesting, the cost-efficiency of these and the quality-awareness of forest owners and operators in this field.

It is important for making decisions on the management and use of forests that the forest owners know the silvicultural needs and utilisation possibilities of their forests as well as the economic and ecological impacts of forestry operations.

Meeting the objective requires e.g. training of forest professionals and advice and training for forest owners. Utilisation of regional forest management planning data and other data on natural resources is increased and the coverage of tailored forest management planning for individual estates is raised to 75 per cent. The availability, quality and marketing of services to the forest owners are enhanced in order to raise the forestry activity of forest owners. The competitive structure of the market for forest management and forestry services is improved. Research and development activity is directed on improving the economic profitability of silvicultural and roundwood harvesting operations, on method development and on raising the mechanisation degree of forestry. Financing for sustainable forestry is taken care of as described in Section 3.1 and the operational requirements for the developing forest industry as described in Section 3.2.

3.3.2 Increasing the use of forest energy

The objective is to raise the use of forest chip to at least 8 million cubic metres per year by 2015 in a way that will not harm the biodiversity of nature and the nutritional balance of the forests.

The use of forest bioenergy has grown steadily in Finland. The use of bioenergy is especially promoted by the development in the prices of fossil fuels, by emissions trade, by the reduction of production costs enabled by the research and development work, by the aim for self-sufficiency in energy, by business, employment and regional policies, by the climate and energy political aims of the EU as well as by general concerns about the climate change.

The forest resources provide an opportunity to increase domestic production of energy. The aim is to direct the development towards a controlled balance between forest energy and the use of industrial wood. The production and use of forest chip can be raised from the present three million cubic metres to at least eight million cubic metres per year. The energy markets and energy policy can improve the competitiveness of forest energy, which would enable a further raise of the annual aim by 3–5 million cubic metres. Most of the forest chip is branch and crown mass harvested from regenerative fellings, stumps and small diameter timber from thinnings of young stands. According to the statistics compiled by the Finnish Forest Research Institute in cycles of a few years, the use of traditional household wood mainly for heating has amounted to 5–6 million cubic metres per year.

More research data is needed on the effects of increased use of forest energy on the development of forests, on the nutritional balance and on biodiversity.

Meeting the objective requires e.g. an increase in the research and development of harvesting of forest energy through wide-based research and development programmes on bioenergy. The programmes embrace harvesting, transportation, storage, distribution, measuring methods and quality criteria of forest energy, harvesting technologies, processing of wood-based fuel, burning technology and processes as well as the effects of harvesting of energy wood on forest biodiversity and nutritional balance. Heat entrepreneurship is promoted. The use of energy and investment support and information guidance by the Ministry of Trade and Industry and the Ministry of Agriculture and Forestry is intensified and sufficient resources are provided for this activity. Coordination between the activities of various branches of government is increased. Furthermore, the operation and introduction of new means for economic management are studied.

3.3.3 Development of forest estate size and structure of forest ownership

The objective is to increase the average size of forest lots and the number of forestry entrepreneurs.

Private persons own 60 per cent, the State 26, companies 9 and municipalities and others 5 percent of the forest land area. There are about 444 000 private forest estates, 920 000 forest owners and the average size of private forest lots under one owner is 24 hectares. The average age of private forest owners has risen to 59 years, 19 per cent of the forest owners are agricultural or forestry entrepreneurs and 60 per cent of the forest owners live in rural areas.

Aging of the forest owners, growing numbers of pensioner or urban forest owners and a decline in the number of farmers will all play a role in the development of forest ownership within the next decade. The most significant structural change will oc-

cur when the forest property of the large age groups is transferred to the younger generations after 2015. The estates are often partitioned in connection with generation changes, which further reduces the estate size. The structural change will make the aims of forest ownership more diverse, reduce the significance of forests as a source of income and increase the need for advisory services to the forest owners.

The size of private forest lots is on the average too small for cost-efficient and pre-planned forestry and forestry business. The conditions for keeping the estates undivided and for increasing the estate size should be improved. Also alternative forms of ownership should be developed.

Meeting the objective requires e.g. development of tax and rural legislation in such a way that generation changes on forest estates and acquisition of more land into the forest estate become easier. It should be more advantageous than at present to transfer the estate as a whole to one owner in connection with the generation change. In inheritance taxation, forestry entrepreneurs should have equal status to agricultural entrepreneurs. The possibilities of common forests, new partitions and forest ownership in the form of a limited company should be introduced to the general public and development work increased. Legislation should be developed to accommodate new forms of forest ownership, such as property and investment funds.

3.3.4 Effective and targeted organisations in the forest sector

The objective is to produce the public services required by the forest sector cost-efficiently and with regard to quality. The share of the private sector in producing these services is increased for example by implementing the purchaser-provider principle.

The aims for forest policy outlined in the Future Review are higher than the corresponding aims in National Forest Programme 2010 with regard to forest management, forest use and forest conservation. Realisation of the aims calls for efficient organisations and operational practices as well as good cooperation between organisations in the forest sector and various branches of government. Balanced use of forests for the purposes described in the review requires more extensive and versatile advice for forest owners and consideration of the interest groups. The need for advisory service for forest owners will grow as the forests are transferred from the large age groups to the younger generation.

It is characteristic of the Finnish forest policy to use various means of control, such as legislation, financing, advice and other information, in balance with one another. This has proven to be a useful system in practice. The aim is to maintain the weighting of the forest political means at its present status. It is necessary to increase the resources for information

services in parallel to strengthening the financial control means. The share of the private sector is increased in the production of information services.

Meeting the objective requires e.g. that the operation of organisations in the public sector is made more effective according to the existing productivity schemes. Cooperation and common practices between the forestry centres are strengthened. Cooperation between the forestry organisations and operators is enhanced. The division of labour between the forestry centres and other operators is clarified. In addition to the productivity measures, meeting the aims set in this Future Review concerning forest management, forest use and forest conservation calls for an increase in state financing for the forestry centres. The purchaser-provider model is utilised in the use of state funds.

3.4 Forests support regional development, employment and entrepreneurship

3.4.1 Utilisation of the regional strengths provided by the forests and harmonisation of various forms of forest use

The objective is to develop the regional forest programmes and other participatory methods involving the interest groups in order to promote forest-based business and harmonisation of various forms of forest use in a versatile way.

The significance of forests varies greatly from region to region. There is considerable room for improvement in the utilisation of regional strengths. The various forms of forest use can be utilised more effectively than today through multi-sectoral cooperation.

The objective and expectations of the forest owners, forest sector interest groups and the general public concerning forests change continuously along with the changes in society. This means that interactive planning methods are required in order to promote and harmonise the various forms of forest use. Close cooperation with the organisations drafting regional programmes, such as regional councils, environment centres, regional employment and economic development centres and organisations responsible for area planning is important for co-ordinated development of the operating conditions for the forest sector. The operational models and participation systems developed in the Citizen Participation Policy Programme should be utilised also in forest policy.

Meeting the objective requires e.g. developing the programme process, content and execution of the regional forest programmes and also developing the definition of non-marketable values of the forests and their packaging into products. Operational methods for increasing the possibilities for citizen activ-

ity and participation in forest projects important to them are further developed.

3.4.2 Strengthening of versatile entrepreneurship

The objective is to strengthen entrepreneurship based on tangible and intangible products and services of the forest and to promote new business activity and creation of new jobs.

The present and new forms of forest use promote business opportunities, employment and livelihood especially in rural areas. The field of business of forest entrepreneurs may be linked to e.g. forestry and forest management services, forest energy, sawmill industry, procurement and manufacture of timber and wood products, forestry machine and transportation business, training and consultancy services, tourism and recreational services and organic products.

Effective utilisation of the sustainable felling potential and realisation of silvicultural and basic forest improvement operations strengthen forestry-related business activity. There is a growing business potential also in forest energy, nature travel, further processing of organic products and business based on health-related forest products and services. Versatility and networking of the businesses improve the operating conditions.

Meeting the objective requires e.g. increasing the business and marketing know-how and product development of forest sector entrepreneurs and improving management of the production processes and marketing channels as well as networking skills. Business activity is promoted through tax solutions and through start money and development and investment support from the Ministry of Labour, Ministry of Trade and Industry and Ministry of Agriculture and Forestry. The supports must not distort competition. The growing organic product business needs its own action programme for developing strong regional centres of expertise for both nature travel and organic product business.

3.4.3 Availability of skilled labour

The objective is that the forest sector is seen as an interesting work environment with opportunities in order to ensure a supply of skilled labour corresponding to the demands of the employment market throughout Finland.

The working age population is diminishing and migration targets the population centres, which means that availability of skilled labour for the increasingly versatile tasks in the forest sector is a challenging aim. Special attention should be paid on supplying labour for wood procurement and silviculture and on training and well-being. In order for a sufficient number of trainees to apply for the field, the education programmes should be developed, the interest into the branch should be enhanced and communication increased. The forest know-how of children and

the young should be increased by closer cooperation between the forest organisations, the National Board of Education, primary schools and daycare centres.

Meeting the objective requires e.g. more precise forecasts for the regional labour needs through cooperation between various branches of government, educational institutions and employers in the forest sector. The working conditions in the forest sector are demanding, which means that special emphasis must be placed on developing the working conditions and on coping at work. Operational models leading to full-year employment in rural areas should be developed. The number of starting positions in training is adapted to the need. The possibilities to recruit foreign workers are studied. The employment opportunities in the forest sector as well as the significance of the branch as a promoter of sustainable development are introduced in the teaching in schools. The education system is developed as described in Section 3.7.3. Support is given to free-time activities that familiarise the participants with the forest and forest-related professions.

3.5 Management and use of forests is ecologically sustainable

3.5.1 Ensuring biological diversity of the forests

The objective is to stop the regression of forest species and habitats and to secure biodiversity through measures in commercial forests and in conservation areas.

The international community has pledged to slow down considerably the deterioration in biological diversity by the year 2010⁸, and the European Union has decided to stop the deterioration of biodiversity of nature by 2010⁹.

Forest biodiversity develops as the combined result of various actions. In nature conservation areas the natural values of the targets can usually be secured permanently and especially those endangered and demanding species that require forests in their natural state or unbroken forest areas can be preserved. Biodiversity values can be increased through management of conservation areas. The majority of forests are commercial forests, which means that the forestry operations and nature management in them play a central role for ensuring biodiversity.

There are 2,9 million hectares of protected forests and forests in limited commercial use (forest and scrub land) in Finland. This equals 13 per cent of the forest area. Of these, 2,1 million hectares are protected forests (9%). Of the protected forests more than 90 per cent are strictly conserved and outside timber production. Forest protection concentrates to Northern Finland where 21,5 per cent of the forest land is protected or in limited

commercial use. The share of protected forests in the north is 15,8 per cent. In South Finland, the corresponding shares are 3,6 and 2,2 per cent of the forest area (see Appendix 1, Table 1)

The Forest Biodiversity Programme for Southern Finland (METSO) has been carried out since 2003 as a pilot programme. For example, protection based on voluntary action by the landowners has been tested in METSO. This has gained wide social acceptance. METSO can also show versatile investment in the study of forest biodiversity and the programme even contains an extensive restoration part. Further measures are needed in addition to realising the METSO programme for ensuring biodiversity.

Meeting the objective requires e.g. improving the ecological efficiency and representation of the existing network of conservation areas and enhancing nature management in commercial forests. Experience from the METSO programme is the basis for preparing a new action programme for forest biodiversity focusing on all of Southern Finland in 2007. The aim of the programme is a considerable improvement in the state of biodiversity. The programme is an action and financing programme with certain focuses. Various means for ensuring biodiversity will be applied in a versatile way on the lands of all forest owner groups in the programme. Best practices for protecting private lands will be introduced throughout the country in such a way that the forest owner can be offered a wide array of means to realise protection. A comprehensive evaluation of restoration will be completed in 2012 whereafter further action will be decided.

Securing of forest biodiversity requires sufficient resources in the Ministry of the Environment and Ministry of Agriculture and Forestry. As the realisation of old nature conservation programmes ceases by 2009 the funding reserved for execution can be redirected into acquisition of forest areas and compensation. Increasing funds should be reserved for the Ministry of Agriculture and Forestry for nature management in commercial forests and protection agreements. The funding for restoration and management of conservation areas should be secured in the future in such a way that the restoration and management of private protected areas can also be increased.

3.5.2 Continuously improving data base on forest species and habitats

The objective is to obtain an overall picture of forest species and habitats and of the means for ensuring biodiversity that is sufficient for making decisions.

A good data base on forest species, habitats and forest resources and on the effects of forest management operations on them is needed in order to carry out silvicultural and felling operations and to realise protection and recreational use in the forest in an ecologically, economically and socially sustainable way. The research and follow-up should provide information on the ecological, economic and social effects of the means for ensur-

8 World Summit on Sustainable Development (WSSD), Johannesburg 2002.

9 European Council, Gothenburg 2001.

ing biodiversity. This information is used as the basis for development and also for practical applications.

Meeting the objective requires e.g. development of the monitoring and evaluation systems for biodiversity, evaluation of the effects of forestry operations on biodiversity and the national forest inventory. Endangered species in Finland should be evaluated at certain intervals.

3.5.3 Preparation for the climate change

The objective is to prepare for the effects of the climate change in the management, use and protection of forests.

Ecological sustainability of the forests will face new and increasing challenges due to various factors. The largest uncertainty is related to the effects of the climate change: what type of forest will sustain the changes, will our forests grow more strongly than before, will the spruce forests dry out, will forest damages increase? New research data is needed in order to estimate the effects of increased harvesting of energy wood and of the climate change.

Global warming will cause changes at the levels of the ecosystem and individual species. These changes provide both threats and opportunities for the development. A sufficiently comprehensive network for ensuring biodiversity will enable the species to migrate from one habitat to the next. We can best prepare for the effects of the climate change on forestry by maintaining the growth potential of commercial forests on a good level and by keeping the forests genetically diverse and healthy. Carbon can be bound also in the products of the wood industry. Carbon dioxide emissions can be reduced by replacing the use of fossil fuels by forest energy.

Meeting the objective requires e.g. ensuring sufficient genetic diversity of the material for forest regeneration and suitability of the stock for the growth site, considering the effects of harvesting of forest energy on the forests and maintaining their viability. The possibilities of species to migrate from one habitat to another are considered in the development of the network for ensuring biodiversity in the forest biodiversity conservation programme. The Research Programme on Adaptation to the Climate Change is carried out in 2006–2010. Calculation practices should be modified in order for the carbon bound by products of the forest industry to improve their competitiveness.

3.5.4 Taking care of water and ground protection

The objective is that the ecological state of the waterways is at least good by 2015 and that ground protection is developed.

The environmental policy statements and directives of the EU affect the national guidelines on water and ground protection.

The Water Framework Directive of the EU is effected through national legislation. The directive contains a stipulation whereby the quality of the waterways shall be at least good by 2015.

Forestry operations affect the status of waters and the ground. We have learned to reduce the harmful effects but not yet enough. Forests that are in good condition improve the quality of groundwater and prevent the topsoil and humus from washing into the waterways.

Meeting the objective requires e.g. that recommendations and guidelines for water and ground protection based on the most recent research data be included into promotion of forestry and into recommendations and guidelines for good forestry. The water protection measures of forestry are included as a part of the water management plans. Water and ground protection are considered in the collection of forest management planning data and tailored forest management planning for individual estates.

3.6 Forests provide a source of culture and recreation

3.6.1 Preservation and development of the culture based on forests

The objective is to maintain and utilise the versatile cultural heritage related to the forests on a wide scale.

The habitation of Finland and the birth of Finnish culture have based on forests. The forests contain signs of ancient habitation and forest use since the stone age, from ancient monuments to signs and constructions of industrial forest use. The religious rituals and rites involving the forest and trees have shaped the culture and have been recorded in the collective memory reaching across generations. The forest has played a prominent role in the emergence of the Finnish national identity through various art forms at the turn of the 19th and 20th century.

Culturally sustainable forestry takes into account the traditions of forest use, strengthens these and creates new traditions. The aim is that Finns know the various ways of using the forest also in the future and utilise the forest culture for business and in their free time. Ancient monuments and representative samples of the forestry infrastructure from various ages of industrialisation should be preserved. These include structures for floating timber, forestry work cabins, old trail routes and other such structures.

Preservation of old wood buildings supports for its part the Finnish tradition of wood construction and helps develop modern wood buildings and harmonious living environments. This also promotes commercial utilisation of wood construction.

Meeting the objective requires e.g. making an inventory of the cultural heritage targets in the forests in cooperation with the National Board of Antiquities. This data is logged in the location data bases of various organisations. Methods for preserving cultural and scenic heritage targets during forestry operations should be developed.

3.6.2 Securing every man's rights through cooperation

The objective is to secure every man's rights in their present extent through enhancing common operational models that can be adopted by all forest users.

Every man's rights are a part of traditional forest use in Finland and the basis for recreational use of nature. Finns should be encouraged to use every man's rights in order to keep the relations of the urbanising population to nature alive.

The best way to secure every man's rights is to ensure their responsible use. The use of every man's rights shall not harm the owner of the land or water area, nature or other users. Understanding the essence of every man's rights and obligations requires cooperation between all those responsible for recreational use of the forests, clear operational models as well as versatile training and citizens' communication.

Meeting the objective requires e.g. agreeing on common operational models between the land owners, recreational forest users, civic and nature conservation organisations and the authorities as well as effective communication about these models. The Outdoor Forum that has nearly twenty civic organisations as its members, in addition to the authorities, acts as a central cooperation network. There is a need to develop operational models especially in nature travel and other business activity, in which the commercial utilisation of every man's rights and the rights of the land owner may clash. Teaching every man's rights should be included in the curriculum of primary schools.

3.6.3 Considering the needs of recreational use

The objective is to consider the multiple needs of outdoor and recreational use as well as game management in silviculture and forestry. Hiking routes are constructed and maintained in such a way that recreational use of the forests continues to grow and can be directed in areas reserved for outdoor use.

Urbanisation, rising income levels, amount of free-time and changes in the age structure affect the growth of recreational use of the forests and nature travel based on it. Increased awareness of health and well-being also raise the interest. As a business, nature travel is most significant in Lapland, Kuusamo and Kainuu. The growth prospects in nature travel are large-

ly based on an increase in the number of foreign customers, for which the prospects are favourable especially if there are enough tailored products available for various customer groups.

The central challenge in the recreational use of forests is related to balancing the supply and demand of the recreational opportunities. The biggest need for recreational and hiking areas is in South Finland, near the population centres. The significance of forests close to urban areas is growing, which means that the use of forests and green areas should be carefully planned in cities and municipalities. The forest landscape is an integral part of the Finnish living environment and culture whereby the effects of forestry and conservation operations on the landscape should be considered.

Well tended and signposted hiking routes and service structures promote recreational use of the forests and nature travel. Pre-existing routes guide nature hikers in a way that is acceptable to the landowners, for nature conservation and for environmental education. The routes support preservation of biodiversity in nature since they prevent wear of the soil efficiently.

Meeting the objective requires e.g. managing the forests in areas designed for recreation in such a way that the forestry operations serve the hikers and those seeking recreation in nature. The planning processes for land use and plan markings with regard to various uses of the forest should be clarified. Landscape planning methods should be developed. The possibilities of recreational values trading for preserving and utilising the recreational values of forests should be studied. Route surveying should be used in various degrees when establishing hiking routes, taking into consideration the land ownership situation and continuous route maintenance. Funding for the maintenance should be agreed in connection with construction of the route.

3.7 Strong system of expertise promotes renewal of the forest sector

3.7.1 Networking of research, development and training and education organisations

The objective is to strengthen the expertise and innovation system of the forest cluster in such a way that research and development, training, administration and business activities function in close cooperation.

The forest cluster is one of the most important centres of expertise in Finland. Maintaining high expertise and the ability to renew as well as innovations are key factors for successful companies and societies. Strengthening the internationally high-level centre of top excellence requires a common strategy for know-how and expertise throughout the value chain of the for-

est to the entire forest cluster and measures for realising this strategy.

The aim is more versatile use of the forests and wood, which requires widening of the know-how base in the field. The development needs in the innovation system centre on the chemical forest industry, the wood products industry, on recreational and nature travel and on the organic products business. The challenge is to combine multi-field expertise in a way that creates possibilities for new scientific breakthroughs, technologies and innovations. The aim of the research strategy for the Finnish forest cluster is to increase the value of the products and services of the forest cluster to one and a half times their present figure by 2015 and to obtain one third of the value from products and services that do not yet exist.

Development of customer-oriented product and service entities requires solid expertise in both the private and public sector. Public research organisations should be developed as active and dynamic cooperation partners for the business sector.

It is possible to create significant innovations by increasing communication and cross-sectorality of various parts of the forest cluster. National and regional operators must network efficiently with European research organisations. Regional development factors must be enhanced. Universities and regional research institutions should increase the know-how capital of the region and ensure that the research data is transferred into practice.

Meeting the objective requires e.g. that the research strategy for the Finnish forest cluster is executed and research resources directed according to this strategy and according to the vision of the European Forest-Based Sector Technology Platform. Operation of the centre of strategic excellence established for research activity in the forest cluster is promoted. The Forest Industry Future expertise centre and expertise centres that support the wood products industry and use of wood for generation of energy function as a part of the Centre of Expertise Programme during the programme period 2007–2013. The focus of the research activities of the Finnish Forest Research Institute is shifted towards business and entrepreneurial activity based on forests and on the social significance of forests without compromising the level of basic research. International financing and the possibilities of the European Forest Institute (EFI) and the European Research Area are actively utilised. The action proposals in the Government Decision in Principle on Promotion of Wood Use and Wood-based Construction adopted by the Council of State on 17 March 2005 are carried out.

Sufficient funding for the above projects in the budgets of the Ministry of Trade and Industry, Ministry of Education, Ministry of the Interior and Ministry of Agriculture and Forestry is secured.

3.7.2 Effective dissemination of research data to the users

The objective is to improve the communication between researchers and practical operators throughout the research and development process from planning of the research to utilisation of the results.

It is crucial for the operation of the expertise system that the research needs of the practical operators are passed on to those producing the information and that the new information and know-how is put to use in practice. Rapid transfer of the research data enables effective development of new products and services, operation systems and methods. Middleman organisations are needed to process the research information and to promote cooperation between the researchers and practical operators.

National and international networking between the regions must be enhanced in order to benefit from the existing information and know-how and especially in order to improve the innovation services required by growing businesses as well as small and medium-sized enterprises.

Meeting the objective requires e.g. supporting operational practices and structures that promote intercommunication of researchers, middleman organisations and information users. Forestry Development Centre Tapio, the forestry centres, the Finnish Environment Centre (SYKE), expertise centres and clusters and the joint service centres of the regional employment and economic development centres and other regional business service providers are important middleman organisations. The usability of public research data and other data collected with public funds, such as regional forest management planning data and the national data bank for nature business is developed.

3.7.3 Education system producing skilled professionals

The objective is to promote high-quality education, increase business know-how and take care of continuous development of the skills of those already in the work life.

Skilled labour is an essential success factor. Matching of the qualitative and quantitative education aims and the future needs of the business community requires continuous intercommunication of the business sector and education planning.

Natural resources, i.e. agriculture, forestry, gardening, fisheries and the nature sector comprising e.g. nature business, nature travel and reindeer husbandry, have not succeeded in competing for new students, e.g. compared to technical and commercial studies. The numbers of students in the forest sector do not correspond to the demand. Whereas there are no jobs available

in many professional sectors, at the same time some professionals, such as forestry machine operators, are in high demand.

The qualitative challenges for higher education will continue to rise. In addition to professional competence, extensive skills especially in economics, social sciences and marketing are called for. The needs of the nature sector should be considered when designing the teaching programmes in order to utilise the growth potential in these activities.

Meeting the objective requires e.g. making an inventory of the educational needs and programmes of the forest and wood sector under the management of the Ministry of Education and adjusting the number of students based on this inventory. Forecasting of the employment and education needs is developed and international connections of the research and training system are strengthened. The public image of the nature resources sector as a modern field of employment and as a sector with future potential is supported through the means of communication.

3.7.4 Strengthening the future work of the forest sector

The objective is to intensify the future work in the forest sector in order to utilise the possibilities created by the changes in the operating environment.

It is possible to produce more versatile well-being for the entire society by developing the existing and new forms of forest use. Forecasting the changes and utilisation of the results of these forecasts is more and more important as the changes in the operational environment create new opportunities and threats for the forest sector. The need for cross-sectoral reviews is also emphasised in the future work since forest policy has more and more intricate links to business, trade, energy and environmental policies.

Forecasting provides information about new possibilities and technologies in the future and estimates coming developments in society. This work calls for future-oriented and unprejudiced attitudes from the entire forest sector.

Meeting the objective requires e.g. that all organisations in the forest sector intensify their future work. The work of the Future Forum on Forests should be made permanent.

3.8 International forest policy promotes sustainable forestry

3.8.1 Finland is active in international forest policy

The objective is to make international processes and actions more influential with regard to promoting sustainable forest management.

The aim of Finland is to prevent for our part deforestation and to promote sustainable management of forests as a source of well-being. Finland is striving for an international forest convention within the United Nations Forum on Forests (UNFF). The forest convention would significantly increase the weight of forests all over the world. However, on the global level, the consideration of a legally binding forest convention has been postponed to 2015. In the Forum on Forests the topical negotiation issue for 2007 is to agree on a non-legally binding instrument on forests.

Internationally set goals and objectives concerning forests have increased due to the ever increasing number of international processes dealing with forests. This has a strong impact on the national forest policy. The goals and objectives set in the various processes do not always coincide and do not necessarily correspond to the national interest regarding sustainable forest management. Finland strives to achieve a working and efficient coordination and cooperation between the international forest conventions, processes and organisations.

The use of wood as a renewable raw material and energy resource, the role of sustainable forestry in the realisation of the development aims of the Millennium Declaration of the UN, forest protection and new innovative products and services based on sustainable use of the forests should be promoted in international forest policy. A positive public image facilitates the availability of capital flows in the forest sector and promotes the export of Finnish know-how in the forest sector to new areas.

Meeting the objective requires e.g. that Finland acts in a coordinated way and influences international forest policy with well-prepared proposals. International conventions and agreements related to forests are executed efficiently in Finland. Preventing deforestation and promotion of sustainable forest management are considered in development cooperation as well as in public purchasing concerning imported wood.

3.8.2 Smooth cooperation between the administration, research and interest groups

The objective is to continue the versatile national cooperation of different government sectors and interest groups. Another objective is to strengthen the role of scientific community and non-governmental organisations in international processes.

It is essential to utilise high-level research and expertise of the practitioners in the increasingly complex international processes covering larger and larger entities and more and more sectors.

International forest research should cooperate more closely with the most important development projects in the forest sector, the financiers of these and with special funding mechanisms, such as the National Forest Programme Facility of the FAO and the Program on Forests (PROFOR) of the World Bank.

Meeting the objective requires e.g. that the proposals and statements of Finland are further prepared nationally in an open and participatory way and utilizing research efficiently in their preparation. Finland supports the participation of forest research organisations, stakeholders and non-governmental organisations in international forest policy processes.

3.8.3 Coordinated activities of the European Union in matters affecting the forest sector

The objective is that decision making concerning the forests, forestry and forest-based industry in the European Union is coordinated and takes into account the special features of the forest sector and the principle of subsidiarity and that the interest groups participate widely in the preparation of proposals.

In the execution of the Forest Strategy of the European Union (1998) and of the Forest Action Plan (2006), Finland emphasises sustainable management and use of forests, viability of rural areas and competitiveness of the forest sector. A central aim of the Forest Action Plan is to improve the coordination of forest issues in the EU.

There is a reference to forests in several EU strategies and regulations and matters pertaining to forests are processed in various directorates of the EU. Binding forest regulations are issued on the grounds of trade, environmental and agricultural policies. These regulations may be in controversy with one another since they have been issued starting from the specific views of each sector.

The EU has also pledged to incorporate the aims of international forest conventions, especially the United Nations Framework

Convention on Climate Change and the United Nations Convention on Biological Diversity into EU legislation and operation.

Meeting the objective requires e.g. that sufficient information on the significance of the forest sector in the EU and especially on the special characteristics of the Finnish forest sector and the boreal coniferous forest zone are available for the preparation of EU proposals. Finland is active in the EU through proposals and statements to influence the planning and execution of the Forest Strategy, the Forest Action Plan and regulations of the EU in such a way that they serve to promote sustainable forestry, increase of well-being, competitiveness of the forest sector and acknowledgement of its role in maintaining the viability of rural areas. The use of sustainably and legally produced wood products is promoted and their free access to other member states of the EU is guaranteed according to the principles of free trade in the home market.

3.8.4 Strengthening of the national forest programmes

The objective is to promote the drafting and execution of national forest programmes and to develop means for improving cooperation between public administration and other operators in the preparation of forest-related policies.

National forest programmes enhance the execution of international commitments and national forest legislation. Harmonisation of the various forms of forest use can be promoted through the national forest programmes and they can also be used for directing the funding for sustainable forest management.

The national forest programmes should correspond to the international principles set for them. The National Forest Programme (NFP) Facility of the FAO and the Program on Forests (PROFOR) of the World Bank are important cooperation partners.

Processes for developing compliance to national forest legislation and for developing forest administration have been created to prevent illegal logging. These are for example the EU Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan approved in the EU in 2003 and regional processes dealing with illegal logging. In the neighbouring areas of Finland, the Europe and North Asia Forest Law Enforcement and Governance (ENA FLEG) Ministerial Declaration and action plan guide the activities.

Meeting the objective requires e.g. that Finland continues international cooperation for realising national forest programmes and is actively involved in the prevention of illegal logging.

4 Estimate of the effects of the Forest Council outlines

4.1 Social influence

The outlines of the Future Review are guidelines by nature, which means that the effects can be estimated on a general level only. A detailed evaluation of the economic, ecological and social effects of National Forest Programme 2015 will be conducted.

The relevant issue is that the fellings in Finnish forests can be raised to the level of 65–70 million cubic metres per year in a sustainable way while the forest resources continue to increase, the forests stay in good health and the biodiversity and cultural and recreational values of the forests are maintained.

The Finnish Forest Research Institute has calculated the sustainable felling potential based on the 10th National Forest Inventory and has estimated the effects of utilisation of this felling potential on employment and added value of the forest sector in the year 2010 based on these calculations. The estimates by Pöyry¹⁰ in 2005 have been used as the growth forecast for the forest industry. The calculations are based on the assumption that all necessary silvicultural operations are carried out timely.

According to the calculations, the added value of the production in the forest sector would amount to about 2 billion euro. The increase in employment including the indirect effects would be about 20 000 person years. More than half of these jobs would be in forestry and in the forest industry. If the rise in work productivity is taken into account, the jobs would be reduced by about 10 000 person years. Nevertheless, the net increase in forestry would be about 1 000 jobs. The increase in the use of forest energy to 8 million cubic metres would provide about 3 000 person years of new employment compared to the present situation.

The increase in fellings depends on the competitiveness of the forest industry, on the cycle and operation of the roundwood market and in a longer range also on the profitability of forestry. The aim is to influence these operational requirements of the sector by the statements in the Future Review.

According to the opinion of the Forest Council it is important to realise that the ample forest resources enable an increase in the use of domestic wood by the industry and to understand all the benefits thereof. The ample forest resources also enable a substantial increase in forest energy and development of new products and services supporting sustainable development. The ample forest resources also support protection of biodiversity.

Ministry	Source of financing	Year 2005 mill. €	Need mill. €
Agriculture and Forestry	Act on the Financing of Sustainable Forestry – silviculture and basic improvement of forests	57	75
	Act on the Financing of Sustainable Forestry – use of wood for energy	5	10
	State financing for forestry centres	47	52
	Development of rural areas	11	16
	Protection of biodiversity	7	15
Environment	Protection of biodiversity *	49	50
Trade and Industry	Support for businesses	20	20
	Finnish Funding Agency for Technology and Innovation (Tekes)	17	20
	Energy support	20	20
Education	Forestry training	110	110
Transport and Communications	Maintenance and development of the road and railroad network**	1 325	1 630
	State financing for private roads**	14	16

Table 2: State funding, main sources of financing

* Includes all financing for acquisition of conservation areas, METSO programme activities and management of forest nature

** Includes all financing for the development and maintenance of the road and railroad network and state financing for private roads

¹⁰ Suomen metsäteollisuuden tulevaisuudennäkymät ja niiden vaikutus puun- tuotantostrategioihin. 2005. JP Management Consulting (Europe) Oy. Report, 29 April 2005.

4.2 Effects on the state economy

The significance of renewable natural resources will grow. This means that more resources should be invested in the management of forests and their biodiversity, in the necessary infrastructure and in the research and development activities of the forest cluster than in the early years of the millennium. There is a need for increase especially in the domains of the Ministry of Agriculture and Forestry, Ministry of Trade and Industry and Ministry of Transport and Communications. In the field of the Ministry of the Environment, funding for the continuation of the Forest Biodiversity Programme for Southern Finland (METSU) should be secured.

Other important sources of financing include the financing by the Ministry of the Interior for regional development including the financing for expertise centres, financing by the Ministry of Agriculture and Forestry for the Finnish Forest Research Institute, development project financing by the Ministry of Labour, and research funding in the domain of the Ministry of Education by the Academy of Finland. The issues concerning financial needs are discussed and decided in the resolution processes concerning the frame for state economy and the state budget.

The Future Review includes several action proposals for revising tax legislation. The actions concern the use of forest taxation as an incentive for silvicultural operations, development of the forests estate size and structure of forest ownership, increase of the use of wood-based energy and promotion of versatile entrepreneurship through tax solutions.

Appendix

Appendix 1: Forest sector in the national economy – central forest statistics

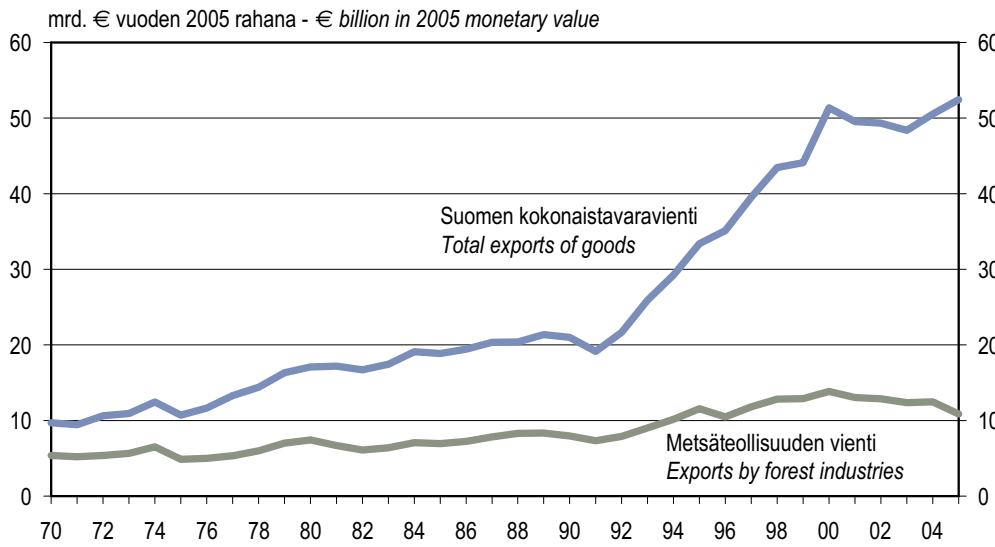


Figure 1. Total value of exports of Finland, 1970–2005

Monetary values are deflated using wholesale price index.
Sources: Board of Customs; Finnish Forest Research Institute

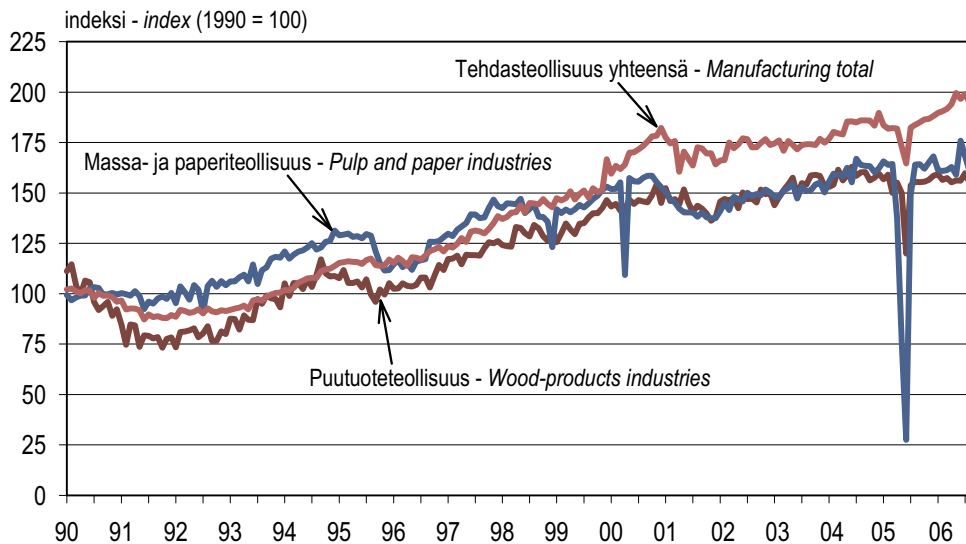


Figure 2. Production of the forest industries, 1990–2006

The figure is based on the seasonally adjusted values of the volume index of industrial output. Latest update: Sep 2006
Source: Statistics Finland

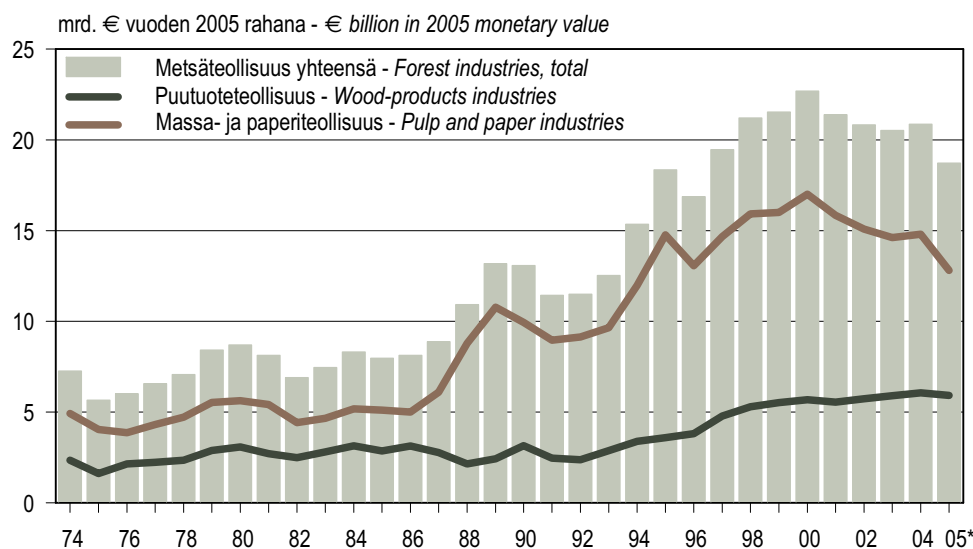


Figure 3. Annual turnover of the forest industries in Finland, 1974–2005

* Preliminary data
Monetary values are deflated using wholesale price index.
Source: Statistics Finland

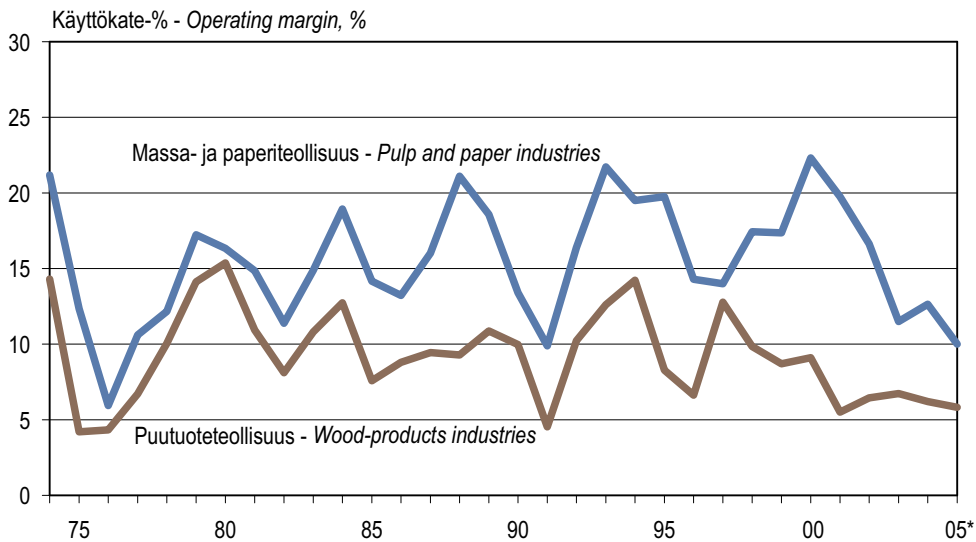


Figure 4. Profitability of the forest industries in Finland, 1974–2005

* Preliminary data
 Operating margin = (Turnover – operational costs) / turnover x 100
 Source: Statistics Finland

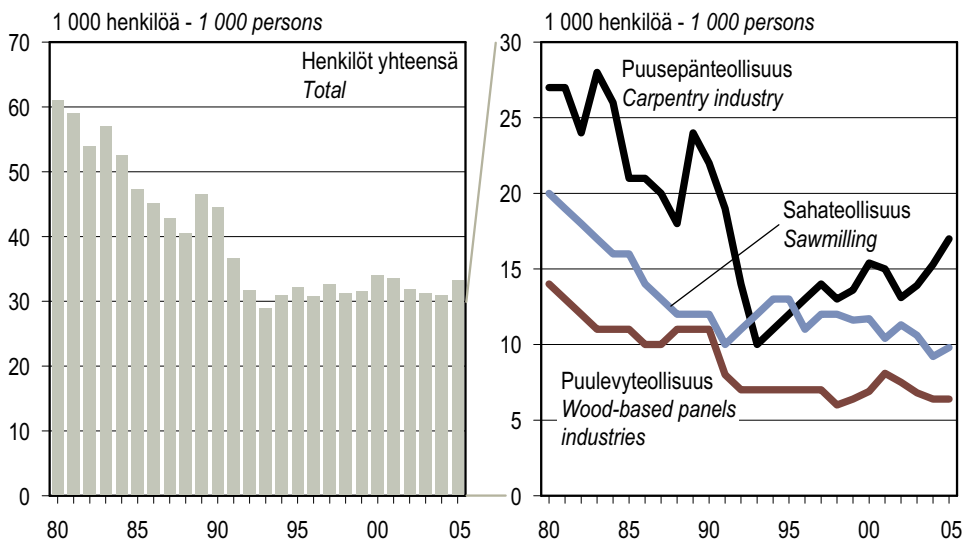


Figure 5. Employed persons in the wood-products industries, 1980–2005

The carpentry industry includes joinery products, pre-fabricated wooden houses, etc.
 Source: Statistics Finland

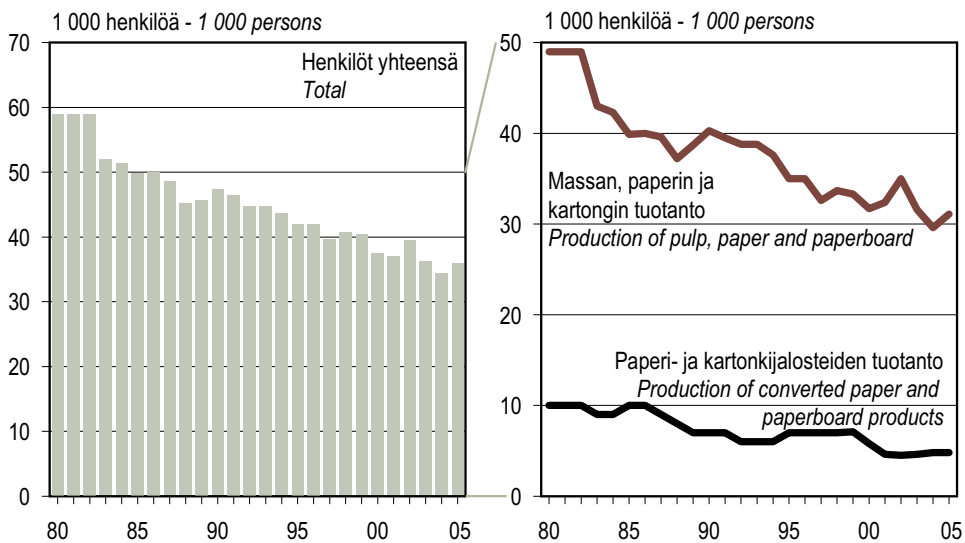


Figure 6. Employed persons in the pulp and paper industries, 1980–2005

Source: Statistics Finland

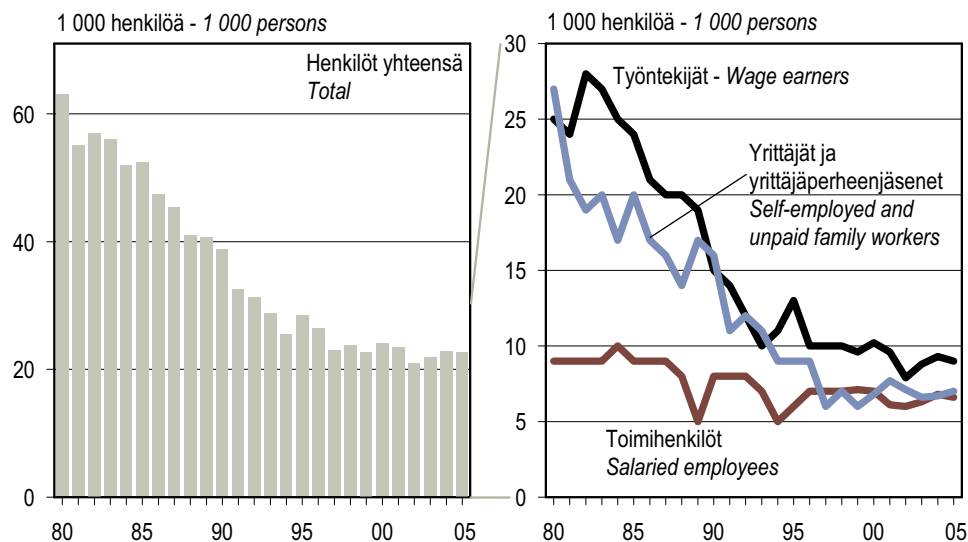


Figure 7. Employed persons in forestry, 1980–2005

Source: Statistics Finland

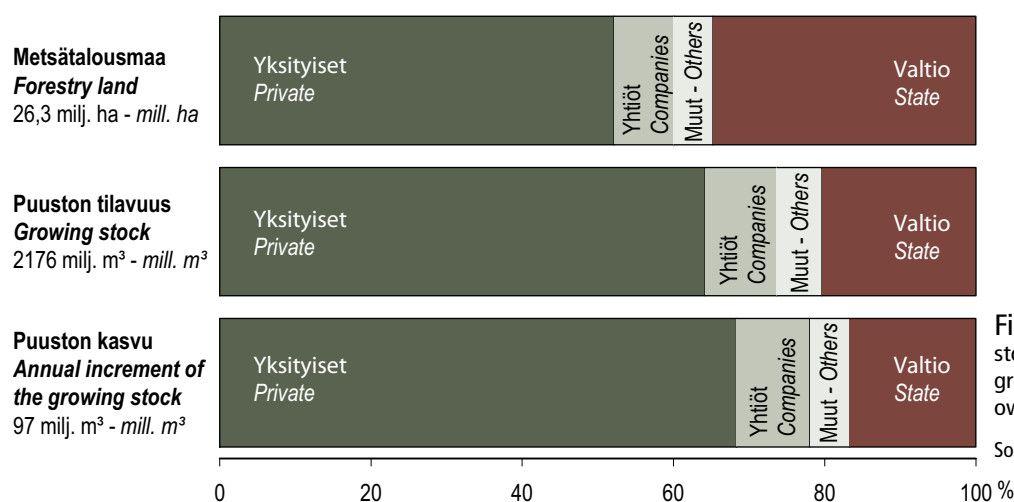


Figure 8. Forestry land, growing stock and annual increment of the growing stock by forest ownership category

Source: Finnish Forest Research Institute

	Whole Country		Southern Finland		Northern Finland	
	1 000 ha	%	1 000 ha	%	1 000 ha	%
Forest and scrub land (9th national forest inventory, 1996–2003)	23 008	100,0	11 595	100,0	11 413	100,0
Protected forests and forests under restricted forestry use	2 881	12,5	422	3,6	2 459	21,5
Protected forests	2 058	8,9	257	2,2	1 802	15,8
– Strictly protected forests	1 885	8,2	203	1,8	1 682	14,7
– Protected forests where cautious fellings are possible	173	0,8	53	0,5	120	1,1
– Forests under restricted forestry use	823	3,6	165	1,4	657	5,8

Table 1. Areas of protected forests and forests under restricted forestry use

Source: Finnish Forest Research Institute

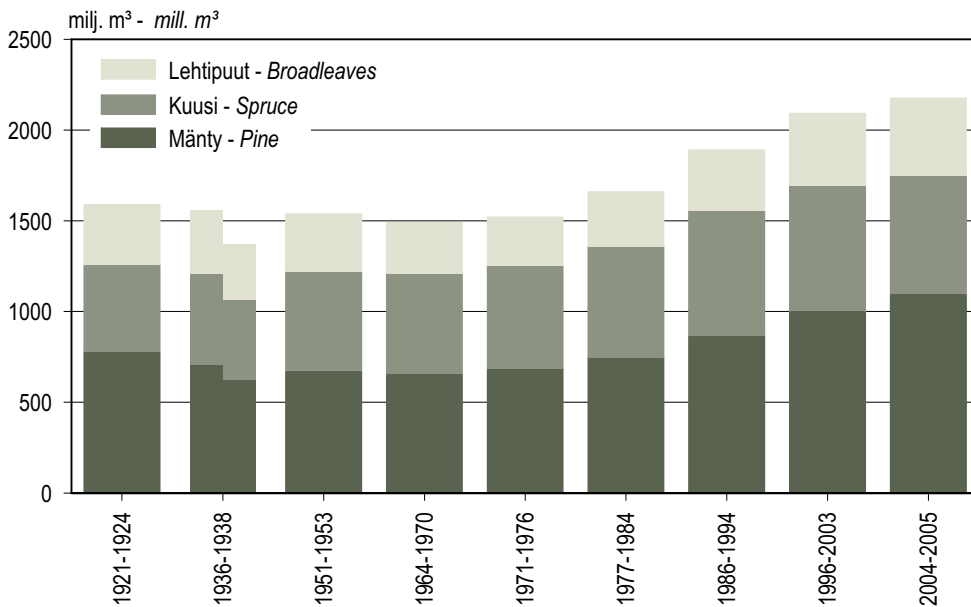


Figure 9. Growing stock volumes on forest and scrub land since the 1920s

The left side of the split column presents the growing stock volumes according to Finland's borders before cession of territory after the Second World War. The right side of the column presents the growing stock volumes to the present area of Finland.

Source: Finnish Forest Research Institute

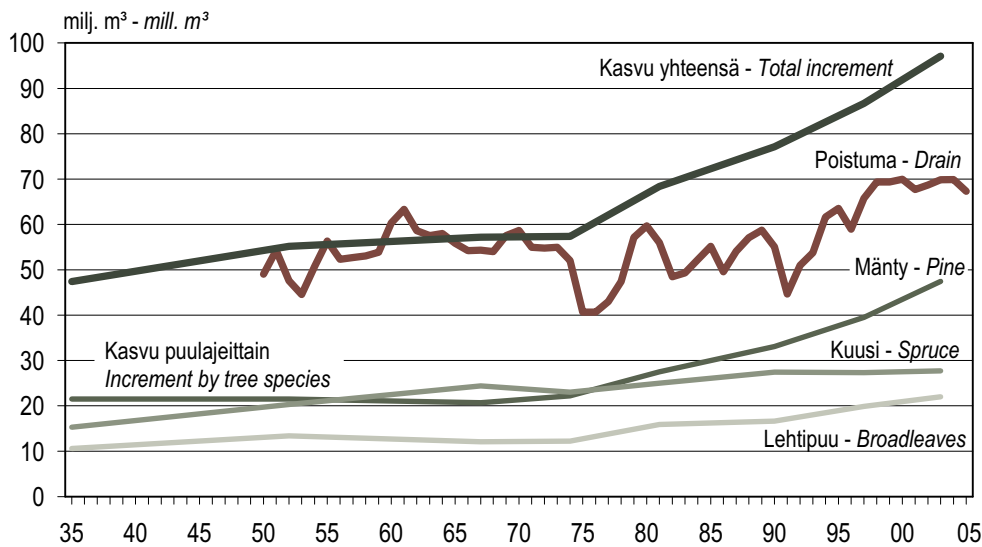


Figure 10. Annual increment of the growing stock and growing stock drain

Source: Finnish Forest Research Institute

Massateollisuus – Pulp industries Puutuoteteollisuus – Wood-products industries

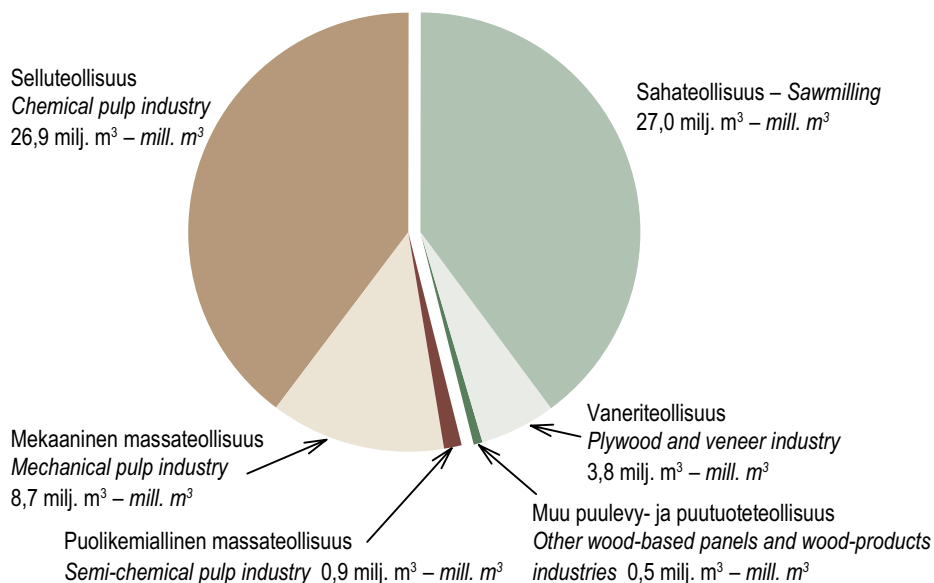


Figure 11. Roundwood consumption by forest industries by category of use, 2005

Sources: Finnish Forest Industries Federation; Finnish Forest Research Institute

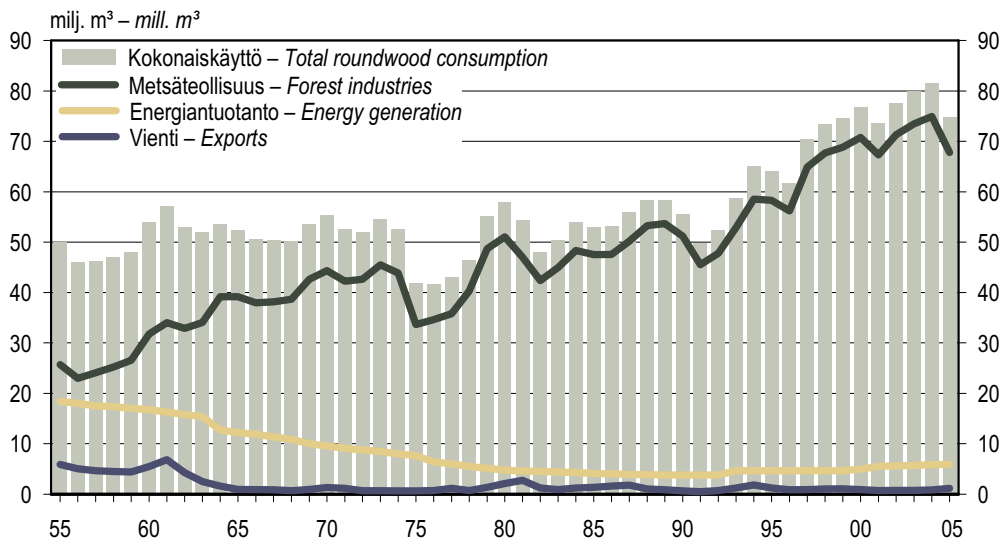


Figure 12. Roundwood consumption by category of use, 1955–2005

In 1955–1992, roundwood consumption for energy generation included also marginal quantities of industrial roundwood used in other consumption categories by e.g. small-sized dwellings, traffic and civil engineering.

Sources: Finnish Forest Industries Federation; Finnish Forest Research Institute

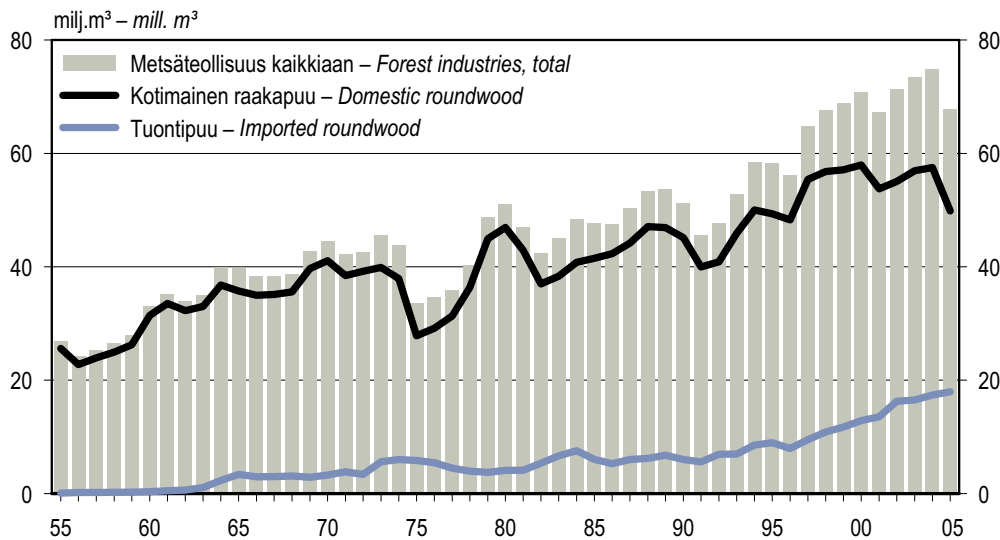


Figure 13. Consumption of domestic and imported roundwood by forest industries, 1955–2005

Sources: Finnish Forest Industries Federation; Finnish Forest Research Institute

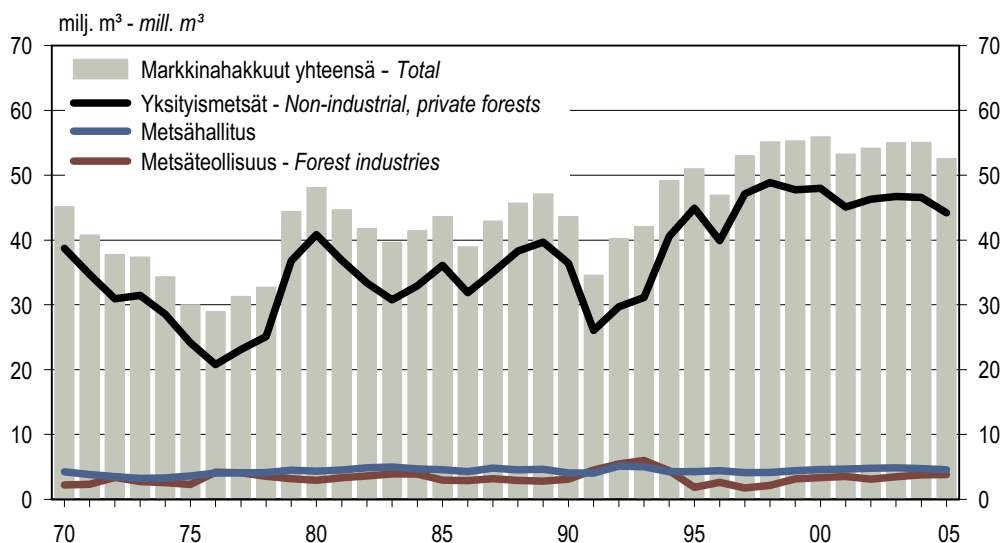


Figure 14. Commercial roundwood removals by forest ownership category, 1970–2005

Source: Finnish Forest Research Institute

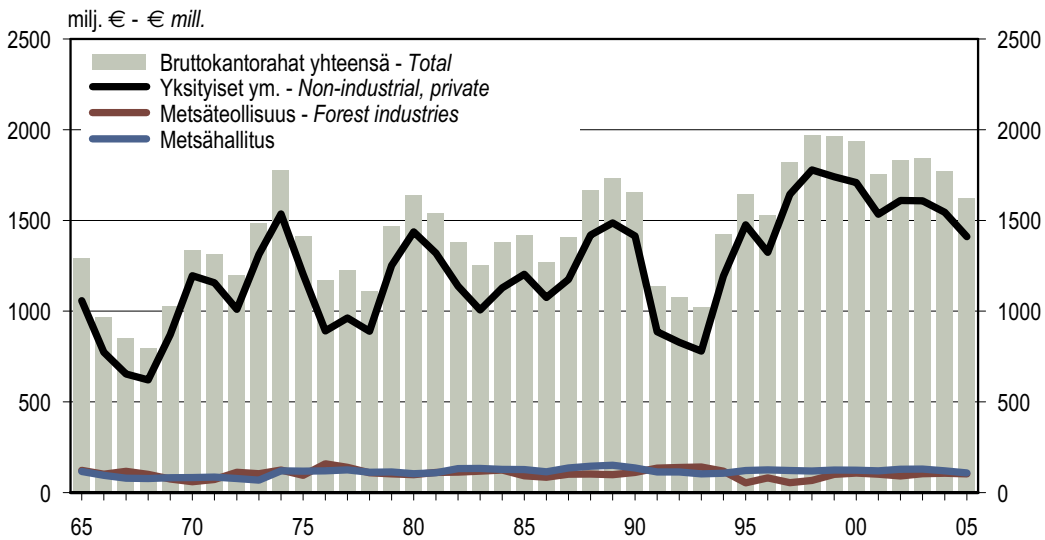


Figure 15. Gross stumpage earnings 1965–2005, expressed in 2005 monetary value

Monetary values are deflated using wholesale price index. Sources: Statistics Finland; Finnish Forest Research Institute

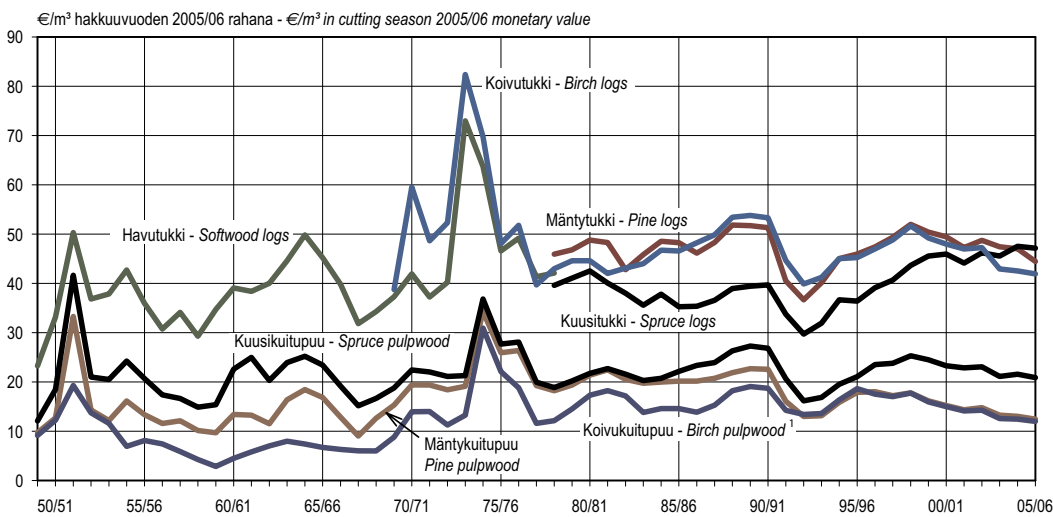


Figure 16. Average stumpage prices in non-industrial, private forests by felling season, 1949/50–2005/06

1 Until felling season 1968/69 birch fuelwood
Monetary values deflated using wholesale price index (domestic goods)
Sources: Finnish Forest Research Institute; Finnish Forest Industries Federation

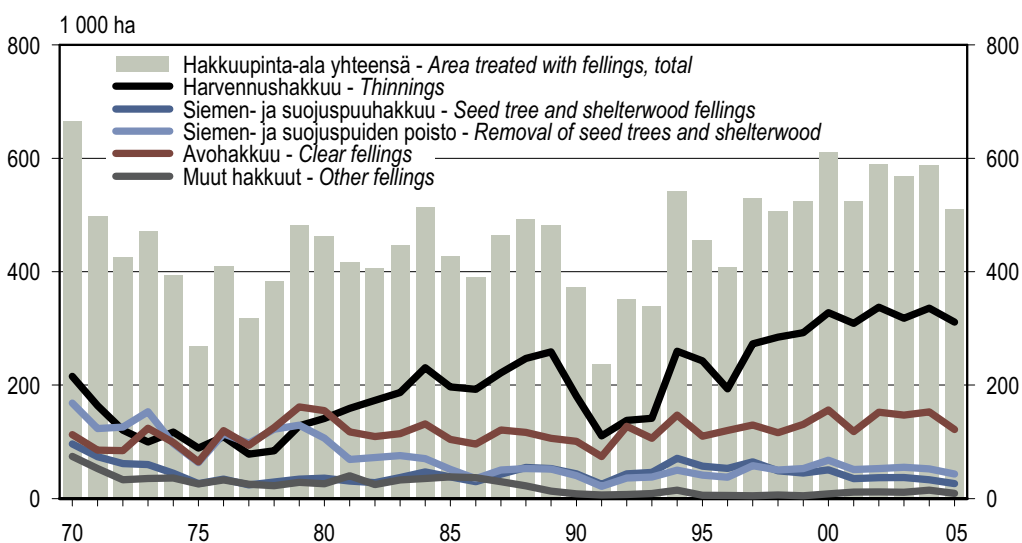


Figure 17. Area treated with fellings, 1970–2005

Other fellings include fellings done along ditch and road construction lines, fellings when clearing land for agriculture. Source: Finnish Forest Research Institute

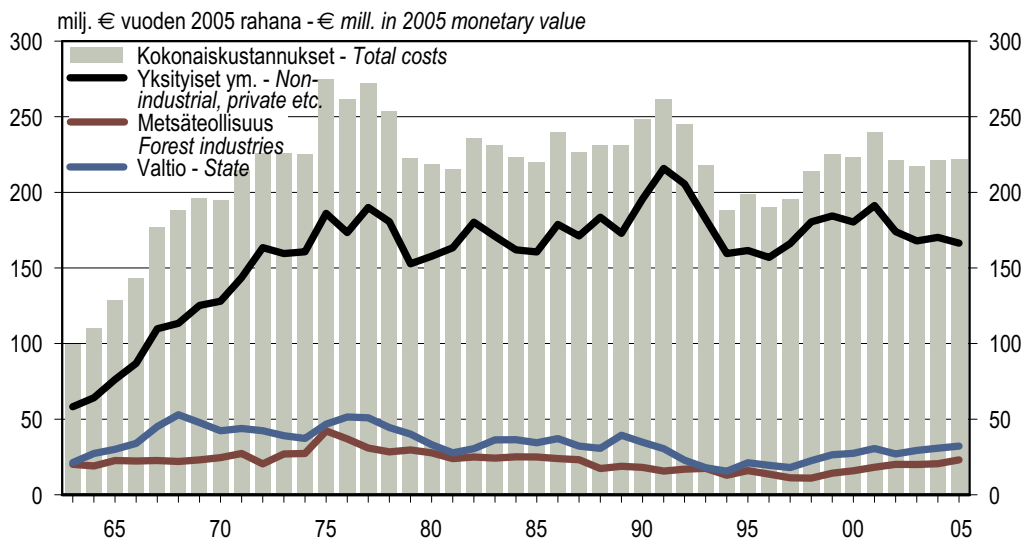


Figure 18. Total costs of silvicultural and forest-improvement works, 1963–2005

Monetary values are deflated using wholesale price index (domestic goods).
Source: Finnish Forest Research Institute

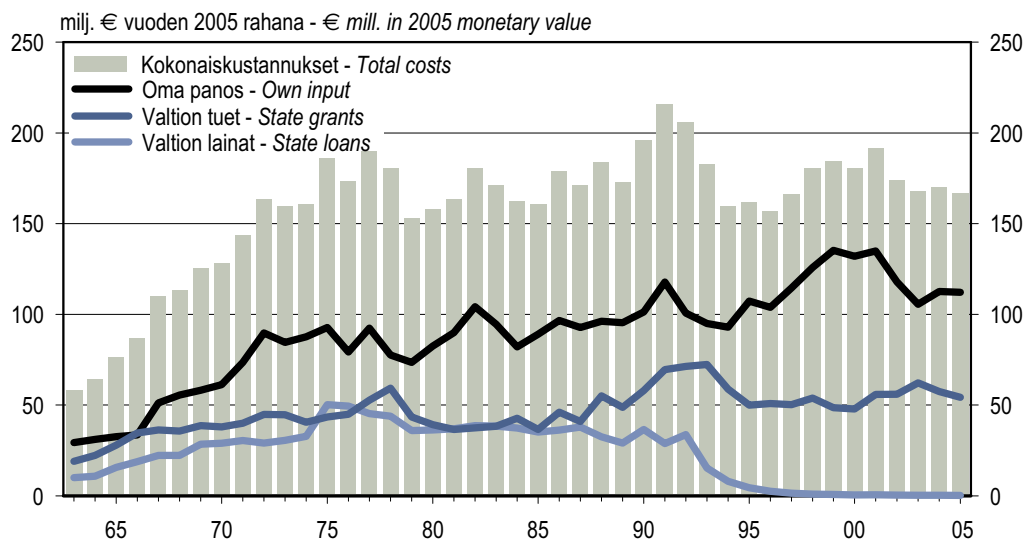


Figure 19. Financing of silvicultural and forest-improvement works in non-industrial, private forests, 1963–2005

Monetary values are deflated using wholesale price index (domestic goods).
State grants for energywood harvesting and chipping are not included. State grants for repelling root-rot disease are not included after 2001.
Source: Finnish Forest Research Institute

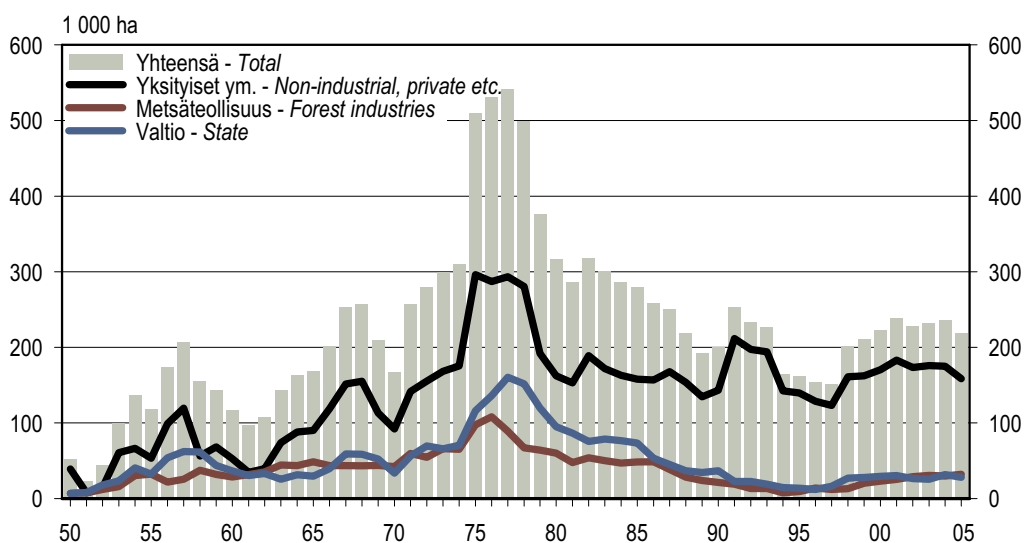
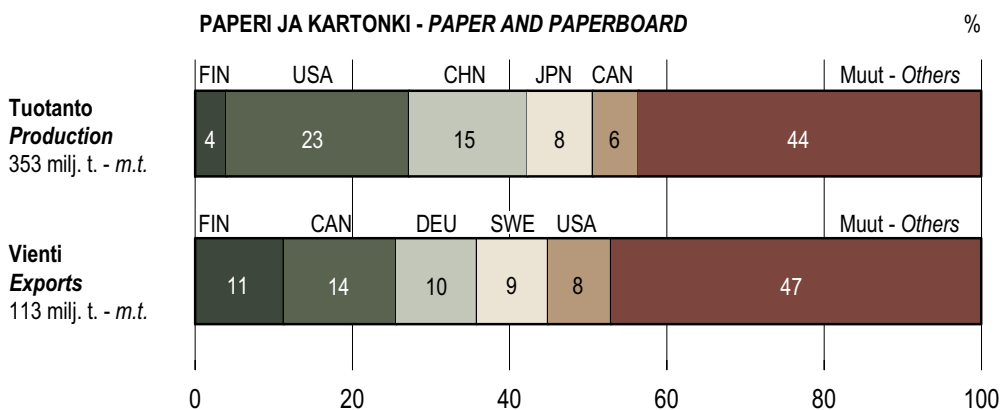
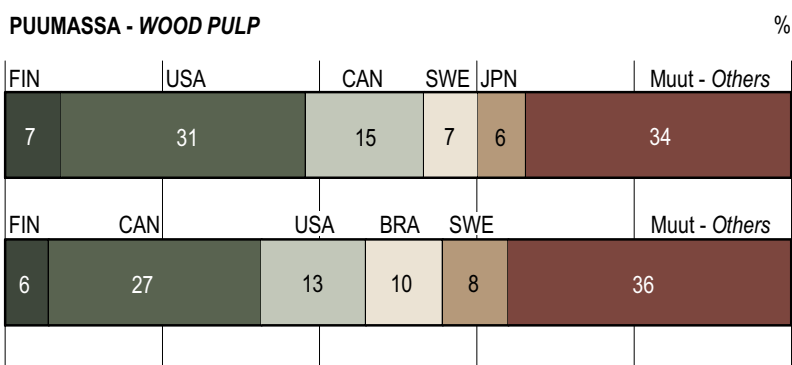
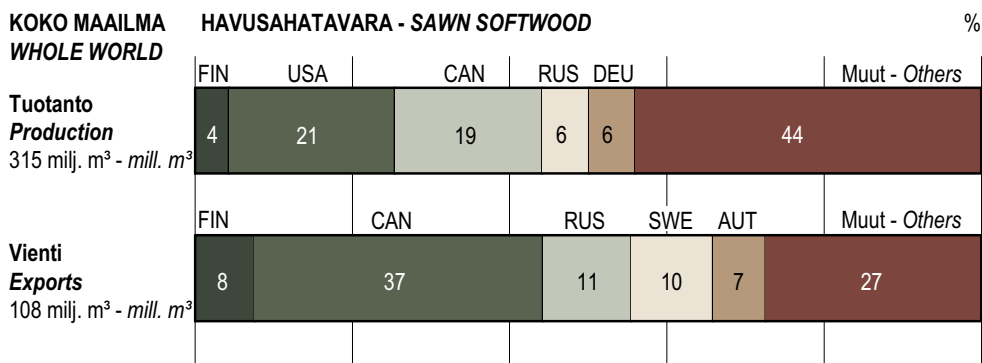


Figure 20. Tending of seedling stands and improvement of young stands, 1950–2005

Source: Finnish Forest Research Institute



FIN	Finland	CAN	Canada	JPN	Japan
AUT	Austria	CHN	China	SWE	Sweden
BRA	Brazil	DEU	Germany	RUS	Russia

Figure 21. Finland's position among the leading producers and exporters of some major forest industry products, 2004

Source: FAOSTAT Forestry Data

Values of forest products 2005	mill. €
Industrial roundwood (stumpage price value)	1 568
Firewood (stumpage price value)	55
Forest chip (value at site of use)	67
Christmas trees (growers' earnings)	10
Forest game (calculatory value)	71
Reindeer husbandry (slaughter earnings)	12,5
Wild berries (value of amount that enters the retail market)	11,9
Wild mushrooms (value of amount that enters the retail market)	1,0
Commercial herbs (gathering for commercial and own use)	5,4
Lichen (value of exports)	1,1

Table 2. Values of forest products 2005.

Some of the figures are rough estimates and thereby not directly comparable with one another. The value of industrial roundwood at the site of use is 1,5 -1,6 times the stumpage price value. The value of direct sales and gathering for own use of wild berries and mushrooms is many times that of the value of the amount that enters the retail market. For example, in 2000 the sum of the said values compared to the values of the amounts that entered the retail market was nearly ninefold for wild berries and about sixfold for wild mushrooms. The estimate for the value of gathered commercial herbs is from the year 2000. This table presents no estimates concerning the economic value of immaterial benefits of the forest nature.

Source: Finnish Forest Research Institute

Appendix 2:
Central objectives and action proposals of the regional forest programmes for 2006–2010¹¹

OBJECTIVES OF THE FOREST PROGRAMMES AND ACTION TYPES	ACTIONS
Timber production objectives on all forestry land	
<p>Roundwood removals 64,1 mill.m³/y (incl. firewood that meets the measure of roundwood) Estimate for commercial roundwood for use by the industry 61–62 mill. m³/y</p> <p>Felling area 661 000 ha/y: – regenerative fellings 190 000 ha/y – selective fellings to promote growth 471 000 ha/y</p> <p>Silviculture and forest improvement: – forest tree breeding and ensuring of regeneration 194 000 ha/y – tending of seedling stands 203 000 ha/y – ditch cleaning/tending of ditched areas 100 000 ha/y – construction of forest roads 636 km/y – basic improvement of forest roads 2 390 km/y – other silvicultural and forest improvement operations (e.g. fertilisation and pruning)</p> <p>Objectives of the types of work in the Act on the Financing of Sustainable Forestry in private forests – Forest regeneration 20 700 ha/y – Prescribed burning 8 000 ha/y – Remedial fertilisation 21 400 ha – Repelling of root-rot 50 900 ha/y – Types of work for tending of young stands: – Tending of seedling stands 105 700 ha/y – Improvement of young stands 62 800 ha/y – Harvesting of energy wood 966 000 m³/y – Chipping of energy wood 925 000 loose m³/y – Ditch cleaning 79 800 ha/y – Construction of forest roads 319 km/y – Basic improvement of forest roads 1 817 km/y</p> <p>Production and use of energy wood – Firewood for home use 5,3 mill.m³/y – Forest chip 5,7 mill. m³/y</p>	<ul style="list-style-type: none"> • Realisation of the aims for sustainable use of forests and timber production (introduction of the aims at the forest owner group, operator and municipal levels) • Development of the data base for forest management planning data and enhancement of its use (increase in felling activity, energy wood targets) • Implementation of new forestry principles and recommendations • Intensification of advisory services to the forest owners (sale of timber/silviculture and basic improvement of the forest) • Improvement in the quality of fellings and silvicultural operations • Improvement in the quality of forest regeneration especially, (appropriate use of soil preparation, monitoring of regenerated areas) • Compliance to the forest certification criteria (especially valid forest management plans on more than 50% of the estates, promotion campaigns for first thinnings and delivery contract fellings) • EU project funding opportunities (e.g. for advice on tending of regenerated and ditched areas, improvement of rural roads) • Development of education and training in forestry and wood products to ensure competence of the regional forest operators, entrepreneurs and forest owners • Development of work methods and cooperation between the operators, e.g. in tending of peatland forests • Ensuring the availability of labour for forestry • Development projects to enhance the use of forest energy: <ul style="list-style-type: none"> – Energy advice – Increase of heat entrepreneurship – Development of harvesting of and technology for forest energy – Acquisition of research data and informing about the effects of energy use of wood on timber production and forest nature • Sufficient funding for support of timber production according to the Act on the Financing of Sustainable Forestry is 86 mill. €/y

¹¹ Weckroth, T. 2006. Alueelliset metsäohjelmat 2006–2010. Yhteenveto metsäkeskusten metsäohjelmista. Maa- ja metsätalousministeriön julkaisu 4/2006.

Business based on forestry	
<p>Development of the wood products industry</p> <p>Increase of forest entrepreneurship</p>	<ul style="list-style-type: none"> • The processing degree of SME:s in the wood products industry is raised in order to improve the regional use of wood as raw material, the profitability of companies and to maintain rural employment: <ul style="list-style-type: none"> – development strategies – product development, training and expert help – networking of companies • Business political programmes and programmes for promoting wood construction • Development of entrepreneurship in forest energy and forestry services
Ensuring ecological diversity	
<p>Development of nature management and biodiversity in commercial forests</p> <ul style="list-style-type: none"> • Preservation of valuable habitats is ensured • Nature management in commercial forests is developed by taking into account the related research results • Natural features of the forests are enhanced through forestry operations • The amount of large diameter decayed wood is increased in commercial forests • The amount of burnt wood and restoration of nature targets is increased • The number of nature management projects is increased and their quality enhanced <p>Creation of areas designated for protection of biodiversity</p> <ul style="list-style-type: none"> • The conservation programmes adopted by the Council of State are realised by the end of 2007 • The aims of the METSO programme are followed in the selection of nature management targets • Increase of decayed wood is concentrated on targets for protection of biodiversity • Protection of valuable habitats is ensured • Targets for protection of biodiversity through voluntary means are increased during 2006–2010 by about 20 000 hectares 	<ul style="list-style-type: none"> • Advice to forest owners on ensuring biodiversity • Continuous training of forest sector operators • Compliance to the forest certification criteria (protection of habitats, retention trees, protective strips) • Utilisation of forest management planning and location data on forest resources • Full-scale utilisation of the measures of the METSO programme in the whole of Finland starting from 2008 • EU project funding, support for ensuring biodiversity, nature management projects • Data from the Finnish Forest Resource Institute as a means for monitoring the increase in decayed wood (National Forest Inventory) • Development of the use of forest certification, monitoring of nature quality and nature management projects in the follow-up • The need for funding according to the Act on the Financing of Sustainable Forestry for environmental support and nature management is 8,4 mill. €/y • The funding need for the means for realising protection of biodiversity (e.g. the METSO programme) is 5–10 mill. €/y based on the funding needs presented in the forest programmes • Water protection in forestry is developed e.g. in nature management projects through measures concerning the drainage area
Employment and regional development	
<p>Improvement of the profitability of forestry</p> <p>Maintenance and increase of employment opportunities in forestry</p>	<ul style="list-style-type: none"> • According to the estimates of the Finnish Forest Research Institute, realisation of the forest programmes will increase employment in forestry by 710 man years (without an increase in the silvicultural and forestry operations this development will be clearly negative) • Enhancement of the use of forest energy boosts employment by about 1 400 man years including its indirect effects • The funding opportunities in the regional development programmes of the EU are studied and utilised

(continues)

Multiple use of forests	
Reindeer husbandry (Forestry centres in North Finland)	<ul style="list-style-type: none"> • State-owned land reserved especially for reindeer husbandry shall not be used in ways that cause considerable harm to reindeer husbandry • Various forms of forest use are harmonised in the natural resources planning process of Metsähallitus • Know-how of forestry professionals considering reindeer husbandry is increased
Game management and hunting	<ul style="list-style-type: none"> • Habitats and small waters important for game are considered in multiple-aim forest planning • Game habitats and natural fish populations of small waters are considered in forestry operations • Drainage area restorations are drafted in cooperation between various operators considering the needs of game management and fisheries • Forestry operators strive to influence the density of elk and deer populations and their regulation • Complementation of the data on the mating places of the capercaillie and its utilisation in forest use • Creation and improvement of habitats for water fowl by establishing filtering fields and wetlands along ditches and streams (as nature management or other special projects) • The means of nature management projects in the promotion of multiple use are studied
Gathering of organic products	<ul style="list-style-type: none"> • Information about the possibilities of organic products (mushrooms, berries and lichens)
Landscape management, hiking, tripping and recreational use	<ul style="list-style-type: none"> • Harmonisation of various forms of forest use is promoted by forest management planning and forestry recommendations in cooperation with regional planning and the forest owners • Cooperation between the operators in the forest sector and designers of hiking routes is increased in order to improve the operational conditions of nature travel • Planning of landscape management measures in connection with forestry operations on valuable landscape entities and special targets • Consideration of multiple use and landscape in forestry operations • Promotion of nature travel and related entrepreneurship in rural development projects

Know-how, participation and development of cooperation	
Cooperation between the forest and environment sector, the operators linked to multiple use, interest organisations and forest owners is increased and developed in order to promote sustainable forestry	<ul style="list-style-type: none"> • Maintenance and development of forest know-how of children and the young • Realisation of the social criteria of forest certification (e.g. drafting a programme for forest know-how for children and the young) • Cooperation between the rural and business departments of the regional employment and economic development centres is increased, especially in the development of the wood products industry and in the use of forest energy • Cooperation between the reindeer husbandry and game management organisations, environmental organisations and tourist and outdoor organisations is increased • The present cooperation forms in the forest and environment sectors (Forest Council, Forest Certification Committee) are enhanced • Communication about sustainable forest use and discussion about forest values are important • Cooperation with regional planning is enhanced
Development of the forest management planning data system	<ul style="list-style-type: none"> • Advisory services based on forest management planning data are developed, diversified and intensified • The targets for harvesting of energy wood are marked in a uniform way • The needs of game management are relayed more effectively to forest management planning and the forest management planning data base • Use of the forest management planning data base is enhanced in the communication on and realisation of the work targets of sustainable forestry
Cooperation between operators in the forest sector	<ul style="list-style-type: none"> • Enhancement of sustainable use of ditched areas (silviculture, forestry and felling operations, nutritional balance, protection of biodiversity, water protection) • Implementation of the revised recommendations for good forestry and emphasis on economic profitability in training and advisory services • Increase of the use of computers and the Internet in communication and training (various "market exchanges")
Timber production methods	<ul style="list-style-type: none"> • Ensuring regeneration, intensification of monitoring, increase in targeted advice and cooperation between the operators • Appropriate targeting of soil preparation methods and water protection • Holistic inventory of the needs of the rural road network and its improvement, cooperation with road cooperatives • Promotion of mechanisation of forestry • More effective production and transportation of material for forest tree breeding (cost control)
Energy use of wood	<ul style="list-style-type: none"> • Study of possibilities for EU funding through rural development programmes for promotion of forestry and for advisory services • Increase of targets for use of bioenergy through information to farms and municipalities • Development of the harvesting methods for energy wood and information about these

(continues)

Wood products industry and forestry entrepreneurship	<ul style="list-style-type: none"> • Study of possibilities for EU funding through rural development programmes for promotion and for advisory services • Increase of the processing degree, networking, marketing, training and consulting to businesses • Promotion of the operation of forestry businesses
Protection of biodiversity	<ul style="list-style-type: none"> • Improvement of the flow of information between forestry operators • Increase of the know-how of forest owners • Improvement of cooperation in prescribed burning and in increasing the amount of burnt wood • Increase of cooperation in nature management projects between forestry operators
Multiple use	<ul style="list-style-type: none"> • Cooperation with the operators in game management <ul style="list-style-type: none"> – Regulation of elk and deer populations – Living conditions of game birds • Ensuring cooperation between reindeer husbandry and forestry in North Finland • Regional and local cooperation regarding efficient travel and outdoor pursuits (hiking routes etc.) • Support of business activity related to multiple use of forests • Development of training and product packaging in the organic products sector
Increased discussion about forest-related values	<ul style="list-style-type: none"> • Open and constructive communication • Cooperation with research • Increase of cooperation between forest research and practical forestry operators, implementation of research data into practice • Ensuring and increasing the resources for advisory forest services

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