SUMMARY

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1 FOREST RESOURCES

The land area of Finland totals 30 mill. ha, of which 86% is classified as forestry land. The area of *forestry land* (26 mill. ha) is sub-divided into *forest land* (20 mill. ha), *scrub land* (3 mill. ha) and *waste land*, *etc.* (3 mill. ha) according to the site productivity (Table 1.1). The national definitions of the forestry land categories are as follows:

- *Forest land*: the potential annual increment of the growing stock is at least 1.0 m³/ha.
- *Scrub land*: the potential annual increment of the growing stock is less than 1.0 m³/ha, but at least 0.1 m³/ha.
- *Waste land*: unless naturally treeless, the annual increment is less than 0.1 m³/ha.

FAO's international definition of a *forest*, as applied in the Global Forest Resources Assessment 2000, sets a canopy cover requirement of 10% as the threshold between forest and other lands. This means that more than a half of Finnish scrub land meets the international definition of a forest.

Finland's forest land area has increased by 1.6 mill. ha since the 1960s as a result of afforestation of agricultural lands and peatlands, as well as intensive forest improvement efforts. Consequently, the share of scrub land has been reduced.

Of the total *forestry land*, non-industrial private forest owners possess 52%. The proportion owned by the State amounts to 35%, and companies own 8%. The remaining 5% belong to municipalities, parishes, etc. Contrary to other ownership categories, State-owned forests are mainly situated in Northern Finland, where the State owns 57% of the total forestry land. In southern Finland, the corresponding share is only 8% (Table 1.7). The statutory nature conservation and wilderness areas (2.8 mill. ha) are mainly located on State land in the northern part of the country (Table 1.6). Mires account for 34% of the forestry land, and their share grows higher in the northern part of the country. More than half of the mires have been drained (Tables 1.3–1.4).

Since the late 1960s, the volume and increment of the growing stock have continuously risen. On forest and scrub land, the total standing volume now amounts to 2 091 mill. m³ over bark. Almost half of the growing stock consists of *Scots pine*. The proportion of *Norway spruce* is 33%, leaving 19% for the broadleaved species, mostly birch. The tree species structure of the growing stock has remained quite stable for a considerable period of time. The proportion of pine is, however, slowly increasing. Two-thirds of the growing stock are located in Southern Finland. The mean volume of the growing stock on forest land is 100 m³/ha. In Southern Finland, the mean volume (125 m³/ha) is almost twice as much as in Northern Finland (70 m³/ha) (Table 1.17).

Nowadays, the volume increment of the growing stock amounts to 87 mill. m³ per year. The annual average of total drain has been 67 mill. m³ during the last ten years totalling 70 mill. m³ in 2004. Since the early 1970s the total drain has been less than the volume increment of the growing stock (Tables 1.22 and 1.25).

Regional differences in land ownership are clearly reflected in the distribution by ownership of the growing stock and, in particular, of the annual increment. Although the State owns 35% of the forestry land, its share of the growing stock amounts to only 20%. The non-industrial, private forest owners' share of the growing stock is 67% and, of the annual increment, 68%.

The objective of the national forest inventories (NFIs), carried out by Metla since the 1920s, is to

produce objective and up-to-date information on the forest resources, forest health conditions and their development for national and regional decision-making. NFIs are based on field measurements of systematically located sample plot clusters. This Yearbook contains new inventory results for the Forestry Centre of Lappi. Finnish forests have been measured nine times. The field work of the 10th national forest inventory was launched in the summer of 2004. The first results at the country level will be available in 2006.

2 FOREST BIODIVERSITY AND HEALTH

Maintaining the biodiversity in forests is one of the main goals of the Finnish Forest Act. Nature conservation areas form the basis for maintaining natural environments. There is a total of 4.7 mill. ha of land with restrictions on wood production. Strictly protected forests (forest land and scrub land) account for 1.7 mill. ha of this area. Most of these reserved areas are situated on State land in the northern part of the country. In 2004, about 42 000 ha of new areas were protected in the implementation of nature conservation programmes (Tables 2.1–2.3 and Fig. 2.1).

Nature conservation areas have also been changed by human influence. Restoration measures aim to assist in the recovery of ecosystems. In 2003 and 2004, altogether more than 7 100 ha managed by Metsähallitus were restored, almost 6 500 ha of these were in existing conservation areas (Table 2.4).

In 2000, threatened fauna and flora were estimated at 1 505 species of the country's total 43 000 species. Of the threatened species, 249 are critically endangered, 452 are endangered, and 804 are vulnerable. 42% of all the threatened species inhabit forests and mires (Table 2.5).

In commercial forests, biodiversity can be promoted e.g., by protecting valuable habitats, by increasing the amount of decayed trees in forests, by keeping living trees on felling sites (especially large-sized aspen and other broadleaved trees), and by applying prescribed burning (Tables 2.6–2.11).

In the duration of the most recent NFI (1996–2003), it was observed that 5.0 mill. ha (17% of the forest lands in Southern Finland and 34% in Northern Finland) were affected by damage, which had reduced the silvicultural quality of the stands. The most frequent damaging agents were weather factors and fungi (Tables 2.12–2.14).

Tree vitality is being widely studied by estimating defoliation, which reflects the combined effect of several stress factors on forests. Trees are regarded to be afflicted by defoliation if their relative foliage loss exceeds 25%. In 2004, it was estimated that 3% of pine, 24% of spruce, and 8% of broadleaved tree species were damaged by defoliation. Defoliation in Finland is modest in comparison to that observed elsewhere in Europe (Figs. 2.5 and 2.6).

Forest health in Finland is at least satisfactory. Acidification is not a problem in our forests because of the decreasing amounts of air-borne pollutants. Climate change and increasing ozone are possible future threats to forests.

3 SILVICULTURE

In 2004, the amount of most silvicultural work increased compared to the previous year. Forest regeneration was completed on 156 000 ha, of which 123 000 ha were regenerated artificially. The proportions of planted and seeded areas were three quarters and one quarter, respectively. Almost all of the seeding was to propagate pine. Two thirds of planting areas were regenerated by spruce plants (Tables 3.4–3.6 and Figs. 3.1–3.3). The tending of seedling stands and improving young stands was carried out on 236 000 ha. This area has increased since the mid-1990s because of extension programmes and increasing state subsidies (Tables 3.10–3.11 and Fig. 3.5).

Approximately 4.9 mill. ha of Finnish mires have been drained. No first-time ditching takes place any more. The area covered by ditch cleaning and supplementary ditching was 78 000 ha. The focus on forest road activities has been transferred from construction to the basic improvements of existing forest roads. Road improvements were carried out on 2 046 km. New forest road construction amounted only to 831 kilometres (Tables 3.14–3.17 and Figs. 3.7–3.8).

In 2004, the total area treated with timber fellings was 588 000 ha, which was 4% more than in the previous year. The proportion of thinnings was 57%, regeneration fellings amounted to 32%, and other fellings were 11% (Tables 3.18–3.19 and Fig. 3.9).

The total costs of silvicultural and forest-improvement works totalled EUR 218 mill. in 2004. The costs were at the same level as in the previous year. The proportion of forest regeneration was 41% of the total costs, and the share for tending of seedling stands and improving young stands was 33%.

Silvicultural work and forest improvement in non-industrial, private forests cost EUR 168 mill. Almost 40% of these private forest owners' costs were covered by state subsidies (Tables 3.20–3.25 and Figs. 3.10–3.12).

4 ROUNDWOOD MARKETS

Chapter 4 provides a detailed overview of the roundwood markets. Two topics are of special interest: roundwood prices (Tables 4.5–4.9), and removals (Tables 4.10–4.18). Most of the information refers to 2004 and the period of January–September 2005. These statistics are generated, mainly on a monthly basis by Metla.

In the first half of 2004, a relatively normal period prevailed on the roundwood markets. The forest industries' purchases from non-industrial, private forests remained at quite an average level. Due to a raise in prices for both sawlogs and pulpwood in September, the supply of roundwood grew considerably, and during the last part of the year the roundwood markets were very active. In 2004, the forest industries purchased a total of 35.3 mill. m³ of roundwood from private forests. This was 7% more than in 2003.

In 2004, the stumpage prices were, on average, 2.3% lower than in the previous year. The prices paid for pine and birch pulpwood, as well as birch logs fell by 9%. The price for pine sawlogs lowered by 2%. The demand for spruce sawlogs was good and the average prices paid for it rose by 1% compared to the previous year. The delivery prices varied less than the stumpage prices. The delivey prices paid for pulpwood fell by 4% and pine sawlogs by 1%. The delivery price for spruce logs remained at the 2003 level.

In 2004, the total commercial roundwood fellings amounted to the same level as the previous year, 55.1 mill. m³ (over bark). Non-industrial, private forests are the main roundwood source for Finland's forest industries, accounting in 2004 for 46.6 mill. m³ or 85% of the total roundwood fellings. Timber felling from the forest industries' own forests totalled 3.8 mill. m³ and felling from State forests totalled 4.7 mill. m³.

In 2004, the forest industries achieved the largest production figure to date (with the exception of sawnwood). The raise in roundwood consumption resulted in a new record in roundwood imports, and in a decrease in the roundwood inventories of the forest industries.

In recent years, roundwood fellings have remained at a very high level compared to the annual average of 45.6 mill. m³ during 1982–2003. In addition to industrial use, some 5 mill. m³ of fuelwood is annually removed for domestic heating purposes in small-sized dwellings.

5 HARVESTING AND TRANSPORTATION OF ROUNDWOOD

Chapter 5 consists of a report on the forestry machines used in wood harvesting, as well as data on the volumes and costs incurred in the harvesting and transportation of roundwood.

In 2004, the share of standing sales was 85% of commercial roundwood production (for volumes, see Chapter 4). In standing sales, the share of mechanised felling amounted to 97% (Fig. 5.3). The degree of mechanisation in regeneration felling was as high as 98%, and in thinning, 94%.

The unit costs in harvesting decreased by 0.5% over the previous year. In standing sales, the unit costs amounted to EUR 8.43 per m³. In delivery sales, the degree of mechanisation was much lower, and the unit costs of harvesting were much higher than in the standing sales (Table 5.0).

In Finland, road transportation by lorry is the dominant mode of long-distance transportation of roundwood. In 2004, 80% of domestic roundwood was transported to the mills by road. The average distance from the forest to the mill was 107 km. In the rail transportation sequence, the average distance was longer at 284 km, and in the water transportation sequence the average was 317 km. The average unit costs of long-distance transportation were EUR 6.03 per m³ (Table 5.3).

With regard to the imports of roundwood, 17.5 mill. m³ of roundwood and wood residues were imported to Finland in 2004. 47% of this amount was imported by rail, 28% by water, and 25% by road. Wood made up about one-fifth of the total weight of import related transportation, but in export related transportation, its share was only 2%. On the other hand, forest industry products accounted for 50% of all export transportation from Finland. Almost all forest industry products were exported by ship (Table 5.7).

6 MULTIPLE-USE FORESTRY

Multiple-use forestry includes a variety of products and services in addition to wood. In this chapter, the multiple-use of forests is divided into roundwood production, forest game, collecting of wild berries, mushrooms and lichen, reindeer husbandry and recreation. Finally, the chapter provides information on peat resources and peat production.

The main product provided by our forests is roundwood. In 2004, the total commercial roundwood fellings amounted to 55 mill. m³ and gross stumpage earnings of forests owners amounted to EUR 1.7 bill. These aspects of multiple-use forestry are handled with more detail in Chapters 4, 5 and 11 of this book.

There are about 300 000 registered hunters in Finland. The overall value of the catch in hunting was estimated to be EUR 67 mill. in 2004. The most important game species in Finland is the moose. It amounted, with meat production of 9.0 mill. kg, to 69% of the overall value of the catch. The amount of commercial wild berries and mushrooms collected from the forests in 2004 was 3.5 mill. kg, and their value totalled EUR 6.2 mill. However, much larger amounts of berries and mushrooms were picked for direct household use. The value of lichen exports amounted to EUR 1.3 mill. (Tables 6.1–6.2 and 6.5–6.7).

Reindeer husbandry is practised in Northern Finland. In the autumn of 2004, about 117 000 reindeer were culled, producing 2.9 mill. kg of meat. After the culling, the winter herd was reckoned to amount to 207 000 reindeer.

Outdoor recreation is an integral part of the Finnish way of life. Traditional free access to forests offers good opportunities for people to go hiking and picking wild berries and mushrooms.

7 FOREST SECTOR'S LABOUR FORCE

In 2004, forestry and the forest industries together employed approximately 88 000 persons in Finland. This amounts to 4% of the total employment. Of the sector's total of employed persons, three-quarters were employed by the forest industries, while about 23 000 were working in forestry. The role of the forest sector has continuously diminished for several decades. At the beginning of the 1970s, the sector employed more than 200 000 persons, corresponding to close to 10% of the total labour force (Tables 7.2, 7.5 and 7.8).

In forestry, the declining trend is mainly due to rapid mechanisation in timber harvesting. Less forest workers are needed to carry out manual work in felling and silviculture. The downward trend however, more or less stabilised in the 1990s. For silvicultural work, the labour force has decreased less than in motor-manual felling. In 2004, the labour input in forestry increased by 5% over 2003. New jobs emerged, not so much in traditional forestry as in new tasks, connected to e.g. nature protection and the harvesting of wood for energy purposes (Fig. 7.2, Tables 7.5–7.6).

In the forest industries, total employment has fallen from 120 000 (in 1980) to 65 000 last year, a decrease of 46%. The decline has occurred despite the fact that the production of sawnwood has doubled, and the production of paper has more than tripled since 1970. Within the wood-products industries, small and medium-sized companies play important roles. In 2004, the sawmilling industry employed about 9 200 and the production of wood-based panels employed about 6 400 persons. The carpentry industry has expanded and there is scope for further expansion (about 15 300 persons in 2004). In 2004, there were approximately 34 400 persons employed in the pulp and paper industries, a decrease of 5% compared to 2003 (Figs. 7.3–7.4, Table 7.8).

In 2004, the average daily earnings of forest workers in motor-manual timber felling amounted to EUR 109 per day. The corresponding earnings in silvicultural works were EUR 79 per day. The average earnings per hour in the wood-products industries (EUR 13.2) and in the pulp and paper industries (EUR 16.7) increased by approximately 3% compared to the preceding year (Tables 7.10 and 7.11).

Statistics on the forest sector's labour force are primarily based on the Labour Force Survey, compiled by Statistics Finland (Tables 7.0–7.9). Among other things, the survey provides monthly information on employment, working hours, unemployment and labour input by branch of industry. Statistics Finland is mainly also responsible for collecting and compiling data on earnings (Tables 7.10–7.12), labour disputes (Table 7.13), accidents at work (Tables 7.14–7.15) and education (Tables 7.16–7.17) in the forest sector.

8 WOOD CONSUMPTION

In 2004, the total roundwood consumption in Finland, including imports and exports, amounted to 80.9 mill. m³, which was the largest consumption figure achieved to date. There was an increase of 1.5 mill. m³ (or 2%) compared to the previous year (Tables 8.0 and 8.1).

In 2004, more than 90% (or 74.9 mill. m³) of the roundwood was consumed by the forest industries, of which the most important consumers were the chemical pulp industry (41%) and the sawmilling industry (39%). With regard to industrial roundwood, 23% (or 17.4 mill. m³) was imported, which also resulted in a new record being achieved in 2004. As shown in Table 8.2 and Figure 8.6, the volumes of imported roundwood have doubled during the past ten years. In addition to roundwood, 12.0 mill. m³ of sawmill chips were consumed by the forest industries, mainly by the chemical pulp industry.

Of the other categories of use, the wood consumption in the heating of small-sized dwellings totalled 6.1 mill. m³, of which the share of roundwood was 5.2 mill. m³, and wood residues amounted to 1.0 mill. m³ (Tables 8.1 and 8.12). The volume of roundwood exports was 0.8 mill. m³ (or 1% of the total wood consumption).

In 2004, the consumption of solid wood fuels (forest chips and by-products of the forest industries, including bark, sawdust, industrial chips, etc.) at power and heating plants accounted for 14.4 mill. m³. Combined with the waste liquors from the pulp industry, the share of wood-based fuels was 21% of the total energy consumption in Finland (Tables 8.12 and 8.13).

The data on roundwood consumption are based on statistics compiled by the Finnish Forest Industries Federation, as well as on Metla's own inquiries.

9 FOREST INDUSTRIES

In 2004, industrial production in Finland was up by 5% over the preceding year. The Finnish forest industry production grew, on average, by 6%. In the pulp and paper industries, the growth rate was more than 7%, while in the wood-products industries the volumes only rose by 2%. Production records were achieved in several branches, such as the manufacturing of chemical pulp and several paper grades, as well as the production of plywood. Thanks to record-high production volumes in most categories, the domestic turnover of the forest industries rose by some 3%, amounting to EUR 20.2 bill. in 2004. Of the total turnover, pulp and paper accounted for EUR 14.3 bill. (Figs. 9.1 and 9.5, Table 9.8).

The capacity utilisation rate in the paper industry averaged 93% in 2004 (cf. 2003: 89%). Paper and paperboard production totalled a record-high level of 14 mill. m.t., this was one mill. tons, or 7% more than in the previous year. Magazine paper alone accounts for more than 50% of the total paper production in Finland. The fastest growth was for coated fine papers which were up by 19% compared to 2003. The production of mechanical paper grades increased more slowly, 5% over 2003 (Tables 9.2–9.3).

The total production of sawn goods amounted to 13.5 mill. m³ in 2004. This was only 1% less than the record level of 2003. Half of that was pine sawn goods, and the other half was spruce. Since the early 1990s, the domestic consumption of sawn goods in Finland has risen to world record levels, amounting currently to 1.1 m³ per capita. In 2004, some 40% of sawn goods (or 5.6 mill. m³) were delivered to domestic markets. The total production of plywood amounted to 1.35 mill. m³ (+4% over the previous year) (Tables 9.1 and 9.4).

In 2004, domestic investments by the forest industries totalled EUR 710 mill., a decrease of 5% compared to 2003 and the lowest amount since 1986. More than 70% of investments took place by the pulp and paper industries. The forest industries accounted for 24% of all industrial investments in Finland. Total debts fell to 96% of the annual turnover in Finnish forest industries. The corresponding figure for all industrial sectors was 76% in 2004 (Tables 9.7 and 9.9).

The production statistics concerning the Finnish forest industries are compiled by the Finnish Forest Industries Federation. Some supplementary data provided by the UNECE and CEPI are also utilised. The statistics on investments, turnover, profitability and financial position of the forest industries, are based on the data gathered by Statistics Finland.

10 FOREIGN TRADE BY FOREST INDUSTRIES

In 2004, the value of exports for Finnish forest industry products totalled EUR 12.0 bill. The forest industry's share of Finland's total exports accounted for 24%, which is a very high proportion on international

comparisons. However, the forest products' share of exports has gradually decreased, as the share of electronic and communication technologies has grown (Table 10.0). In 2004, the value of exports for forest industry products increased by 2% over the previous year. However, the growth rate was slower than the growth rate of exports in other industries (Fig 10.1, Table 10.12). The main reason for the modest figures in the forest sector was the low price level of products, especially in the pulp and paper industries. A large majority of the forest industry's production was exported: about 91% of the annual paper production, 86% of paperboard, and 61% of sawmilling products (Fig 10.7).

The European Union is the main market for Finnish forest products. Its share of the value of forest industries' exports was 68% in 2004. The most important customers were Germany (18% of total value of forest-based products), the United Kingdom (13%), USA (7%) and France (6%) (Tables 10.9–10.10). Pulp and paper products (EUR 9.2 bill.) constitute 77% of the forest sector's exports. The main products were high-quality magazine and fine papers. The exports from the wood-products industries totalled EUR 2.8 bill. Half of this consists of sawn goods and one fifth of plywood (Table 10.12).

The imports of forest industry products amounted to only EUR 1.1 bill. The primary product group was converted paper and paperboard products (Table 10.20).

Again in 2004, Finland's imports of wood amounted to an all-time high of 17.5 mill. m³ (over bark). The volume of imported wood increased by 5% from the amount of the preceding year. From the early 1990s, the imported wood volumes have more than doubled (Fig 10.2). Currently, almost one-fourth of the wood consumption of the Finnish forest industries is accounted for by imported wood. Although the share of coniferous sawlogs has grown during the last few years, 36% of imported wood still consists of birch pulpwood (Tables 10.1–10.3). The forest industry considers imported birch volumes supplementary to inadequate domestic supply. Imported wood mainly originates from Russia (80%), and the remainder mainly comes from the Baltic countries: Estonia (7%) and Latvia (6%) (Tables 10.4–10.5).

Finland is a major net importer of wood. The amount of exported wood totalled only 1.1 mill. m³ in 2004. Two thirds of this were transported to Sweden. The exports consist mainly of pine and softwood chips (Tables 10.6–10.8).

The National Board of Customs is in charge of compiling Finnish trade statistics. The statistics describe the commodity trade between Finland and other countries. Transit trade is not included. The data collection for statistics is carried out by using two different systems: The data on the European Union's internal trade are obtained from importers' and exporters' statistical reports on that trade (Intrastat system). The data on the European Union's external trade is obtained through the customs clearance system. The basic data are classified according to the Combined Nomenclature (CN), which is the classification system for goods traded within the European Union. All official foreign trade statistics in Finland are aggregated from the data produced by the Board of Customs.

11 FOREST SECTOR IN FINLAND'S NATIONAL ECONOMY

In 2004, the Finnish economy grew somewhat faster than during the preceding years. Finland's gross domestic product (GDP) at market prices amounted to EUR 150 bill., indicating an increase of close to 4% over the previous year. The growth was mostly due to the 7% increase of investments. The investments in housing increased by 10%, which contributed to the 4% increase in the sawmilling and plywood industries. Due to the decline of export prices in 2004, the value of the pulp and paper industry production continued to fall but only by 2% (c.f. a drop of 15% the year before). Gross stumpage earnings were EUR 1.7 bill., which is 3% less than in the previous year. Within the forest sector, pulp and paper industries are the most important branch, producing 49% of the total value added of the Finnish forest sector in 2004 (Tables 11.0–11.11).

Although the share of the forest industry in gross domestic product has decreased during the last decades, it still is one of the most important industries of the Finnish economy. An increase in demand for forest industry products by EUR 10 mill. creates a EUR 20 mill. increase in domestic output. The forest sector's share of net export income was 27% in 2002 (Tables 11.12–11.16).

In non-industrial, private forestry, stumpage earnings decreased by 3% (EUR 112/ha). The total timber production costs in non-industrial, private

forestry were at the same level as in the previous year (EUR 22/ha), of which the subsidies covered EUR 4.5 per hectare. Consequently, the net earnings per hectare, EUR 95 as a national average, were 4% lower than in the preceding year (Tables 11.17 and 11.18).

The data in Chapter 11 are mainly based on Finnish national accounts compiled by Statistics Finland. The accounts have been revised to fully comply with the European System of Accounts, as applied in the EU.

12 INTERNATIONAL FOREST STATISTICS

The latest results from the Global Forest Resources Assessment (FRA-2000) were published in 2001 by the FAO (Tables 12.1 and 12.2). According to the FRA-data, there are approximately 3.9 bill. ha of forests in the world, which makes up about one-third of the total land area and about 0.7 ha per capita in the world. Countries with the largest forest cover are Russia, Brazil, Canada, the United States and China. The total volume of the global growing stock amounts to 386 bill. m³ (over bark).

In the 1990s, the forest area of the world diminished by about 9 mill. ha (0.2%) per year, and this loss has mainly taken place in Africa and Latin America. The forest area of Europe in statistics has, on the contrary, slightly increased resulting mainly from the new definition introduced for the forest when assessing the latest forest resources in temperate and boreal forests (TBFRA-2000).

Table 12.3 presents data on areas of protection and protective functions of forests in Europe. The data are based on the MCPFE (Ministerial Conference on the Protection of Forests in Europe) classification adopted by the 4th Ministerial Conference on Sustainable Forest Management in Vienna in 2003. It must, however, be noted that the national data are not harmonized on a pan-European level, so the figures presented are based on the information delivered by national correspondents according to their own interpretation of the MCPFE classification.

In 2003, the world's roundwood production was approximately 3.3 bill. m³. The largest producer was the United States amounting to 0.4 bill. m³. Globally, more than a half of the roundwood produced was fuelwood, the largest producers being Asia, Africa and Latin America (Table 12.6, Fig. 12.2).

The world's production of sawn goods increased from the year 2002 by 1%, and amounted to 399 bill. m³ in 2003 (Tables 12.7 and 12.16, Fig. 12.3). Approximately three-quarters of the total production was sawn softwood. The world's production of paper and paperboard also increased by 1%, and amounted to 328 billion m.t., the largest production achieved to date (Tables 12.8 and 12.17, Fig. 12.4).

The United States is the leading country in the production of different forest products. In addition to roundwood, the USA produces the largest volumes of sawn goods, wood-based panels, pulp, and paper and paperboard products. As an importer and exporter of forest products, the USA is also among the largest.

According to the data for 2003, Finland ranks 4th in the world regarding the value of exports of forest-related products, representing approximately 8% of the world's total value (Table 12.15). The three bigger exporters were Canada, the United States and Germany. Finland's position as a significant paper and paperboard exporter is based on the country's leading position as an exporter of printing and writing paper, its share being 19% (Table 12.13). On the other hand, Finland ranks 3rd after Japan and China with respect to the volume of imported wood (Table 12.10).

The forest sector in the world employed approximately 13 mill. persons or 0.4% of the total labour force in 2000 (Table 12.18). The forest sector's share of the labour force was largest in Estonia, Latvia and Finland, approximately 4% each. Globally, the gross value added of the forest sector amounted to USD 352 bill. or 1.2% of the total GDP (Table 12.19). The largest proportion, 8%, occurred in Finland, followed by Estonia, Latvia and Malaysia, by approximately 5% each.

The comparison by country of roundwood price data as presented in Tables 12.20–12.26 should be viewed with caution. Countries tend to differ with respect to trade practices, measuring units, assortments, tree species, and measurement and quality requirements. Therefore, the price data presented by country should be used only to monitor the internal price development of each country.

The data on the global forest resources assessment is compiled jointly by the UNECE/FAO Timber Branch, Geneva (Forest resources of industrialized temperate/boreal countries, TBFRA-2000) and FAO, Rome (Tropical countries and global summary,

FRA-2000). New updated results on the development of forest resources will be available in 2006 (FRA-2005 update). The tables referring to the production and foreign trade of roundwood and forest-industry products originate from FAO's FAOSTAT Forestry on-line database, which includes country-specific forest statistics information since 1961.