EUROPEAN TRADE IN RAW WOOD DURING THE 1950's AND PROSPECTS IN THE DAYS OF EEC AND EFTA

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SELOSTUS:

RAAKAPUUN KAUPPA EUROOPASSA 1950-LUVULLA SEKÄ EEC:N JA EFTA:N VAIKUTUS SIIHEN

HELSINKI 1960

Suomalaisen Kirjallisuuden Kirjapaino Oy Helsinki 1960

Preface

For the suggestion which prompted this work, I wish to extend my thanks to Professor E. Saari, who also, despite the work laid upon his shoulders during his term of office as Minister, willingly gave his time to providing assistance and advice.

The scope of the subject made it impossible to prepare a really penetrating analysis of all the questions concerned. The main object in view was that of throwing some light upon whether or not the European raw-wood market is diminishing.

For their assistance in translation of this work I am obliged to R. Hackman and R. Milton.

I also wish to express my gratitude to all those who helped me in one or another way during the course of preparing this study.

Finally, my deep gratitude is due to the Society of Forestry in Finland for including the work in the Acta Forestalia Fennica series.

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1. Introduction

An outstanding feature of the European market is the amazing re-emergence of the raw-wood trade since the second world war. Obviously such commerce will always occur within the limits of the demand for special woods, but at present a vast trade is being done in logs, pulpwood, etc. for processing in the country of import. What is especially surprising is that the exporting countries persist in the belief that their forest resources permit such depletion, or, looking at the matter from another angle, that the wood-processing industries in these countries have not been developed to the extent that raw-wood resources allow. Not least puzzling is the fact that pulpwood, for instance, is exported not only to countries which have less wood than they require, but also from one export country to another. An example of this is Finland's exports to Sweden, Norway and Austria. In view of the economic axiom that every country should strive to process as much of its own raw materials as it can, it may well be asked whether large-scale trading in raw wood is not destined to disappear. In an investigation into this matter made in Finland in 1958, the following statement was made (Talousneuvosto 1958 p. 2): »Pyöreän puutavaran, maamme tärkeimmän vientiteollisuuden raaka-aineen vientiä on periaatteessa pidettävä epätarkoituksenmukaisena ja pitkällä tähtäimellä tuleekin pyrkiä siihen, että puuraaka-aineen jalostaminen tapahtuu kokonaisuudessaan kotimaassa.» (*The exports of roundwood, the raw material for the most important export industry, must in principle be regarded as unsatisfactory and at long sight one should strive to get all raw materials processed in the home country.*) Furthermore, the concentration of wood-processing production in the countries best suited for it, if it continues, should gradually reduce the demand for raw wood in the countries of import. There is however surely a great deal of common sense in WEGELIUS' (1958 p. 106) statement that: »Det är uppenbart att ju längre export av rundvirke pågår, desto större svårigheter kommer att förknippas med en minskning av denna export.» (*It is apparent that the longer exports of round wood continue, the more will be the difficulties coupled with a reduction of these exports.*) These difficulties arise while: »Inköpsländerna har hunnit förnya och utvidga sina fabriker i takt med importen av råvirke, vars betydelse framgår av den handelspolitiska vikt som den officiellt tillmäts.» (*The purchasing countries have been able to renew and to expand their factories in step with the imports of raw material, whose importance*

is seen from the officially ascribed value from the standpoint of trade policy.) As we know, the raw-wood trade poses an economic problem of no mean significance. In its trade politics, Europe is at present in the middle of an extensive re-grouping which is, it seems, to result in the emergence of larger economic regions.

All this is bound to have an effect on the raw-wood trade, which, ever since the second world war, has been tied up with restrictions of various kinds. On examining the mass of regulations with which the European countries have hamstrung the raw-wood trade during the last 15 years, we cannot help being astonished that LEMMEL (1956 p. 67) really was right when he stated: »Bis zum Jahre 1932 war der deutsche Holzmarkt von Eingriffen des Staates völlig frei.»

In theory, the following types of market can be distinguished:

1. Free competition
2. Monopoly (monopsony)
3. Monopolistic competition
4. Oligopoly (oligopsony)

It is a long time since there was free competition on the international raw-wood market. Neither has any form of complete monopoly been established. The Eastern countries, which channel their exports through State selling organizations, have, it is true, established a form of monopoly, but seldom enough to dictate the development of the market in the purchasing countries. As long as purchases in the United Kingdom were being handled by Timber Control, it was maybe possible to talk about a »monopsony», in which there was a single buyer who dictated his own terms.

Thus the most usual form of market is an oligopoly or oligopsony. On the national market, there are generally a large number of sellers and a smaller number of buyers, but international trade is usually in the form of an oligopoly. In Finland, for instance, the bulk of the raw-wood export is in the hands of a few corporations, large-scale industries and State agencies. On the other hand, it is difficult to visualize the market in a purely theoretical form as long as exports or imports are tied up with State-imposed restrictions. It may now be that we have reached a turning point in State interference, and that the raw-wood trade is about to enter upon a period of greater freedom in which purely economic factors will become paramount.

There is little doubt that the great demand for raw wood in the importing countries will continue. They can certainly increase their own wood reserves to some extent by improving forest management, but no revolutionary change in the ratio of demand to supply can be expected in these densely populated countries. Similarly all forecasts seem to indicate a continued rise in demand. In this connection, the rise in demand for pulpwood is expected to be far swifter than that for other timber (cf. STREYFFERT 1957 p. 75).

It is significant that the fellings calculated by FAO in 1948 as necessary to satisfy the annual total demand for 1950—1960 were attained or exceeded in

all sectors by 1955. Thus without further analysis, it can be assumed that the countries of import will purchase raw wood as long as prices remain reasonable. The main problem, therefore, is to investigate the situation in the export countries and ascertain whether the supply can be maintained.

Since the second world war, FAO has collected and published extensive material on the production and marketing of timber throughout world. In addition, several countries have compiled highly accurate inventories of their forest resources. All this should provide a surer basis for studying the problems of the raw-wood trade. The time seems ripe for a further analysis of connected questions. The analysis can be broken down into two main headings:

1. Will the forest resources of the exporting countries be sufficient to cover exports of raw wood? In other words how will the ratio between supply and resources appear after the present industrial expansion?

2. How will the new politico-economic groups, the EEC customs union and the EFTA free trade area, affect the timber trade?

It need hardly be stressed that these questions are of vital interest for Finland, whose exports of raw wood — about 4 million m^3 annually — are the highest in Europe.

Before passing on to the subject matter proper, here is a brief description of the lay-out of this study.

First, a proper definition of the term »raw wood» and a description of the most important types is given. After a short survey of the market situation, the evolution of the raw-wood trade in Europe is indicated. With the aid of statistics, the emphasis here is on development during the 1950's, which represent a period of what might be called normal economic development. A statistical survey of the immediate post-war period cannot be considered valid on account of the exceptional conditions prevailing at that time. One example of this was the large-scale export of coniferous logs from Western Germany in payment of war reparations, which altered the aspect of the market at the end of the 1940's. On the other hand, trade during the years between the two world wars is merely of historical interest, not the least important reason being the extensive changes of political frontiers that have occurred since.

The emphasis of the investigations is on raw-wood commerce in Western Europe as seen from the point of view of Finland. It is hardly possible to consider this question separately, without taking East Europe into account. Further the Soviet Union may be of decisive importance for the whole of Europe as a supplier of raw wood. We will, however, only touch on the question of non-European countries in so far as it directly affects the raw-wood market in W. Europe. The importing of tropical woods into Europe seems to give rise to such a complexity of problems that no proper analysis of them is possible within the scope of this study.

After analysing exports and imports both quantitatively and qualitatively,

we shall examine the balance of trade in the export countries, in as much as wood is concerned. This particularly concerns the »big four» — Finland, Sweden Austria and the Soviet Union, which exert a decisive influence on the European market. The projects these countries entertain for their wood industries are important. This part of the analysis should make clear how much raw wood, if any, is going to be put on the European market in the near future.

Probable developments in the demand for wood have been thoroughly elucidated in a number of recent studies, so it should be possible to calculate the import demand without much difficulty. This only calls for a brief survey of the wood trade balance of the most important countries of import and an analysis of the probable development of demand in different types of raw wood.

The second part of the investigation will cover the new market groups in Europe and the opportunities for a common market. Difficulties arise in view of the rapidity of the politico-economic developments within the EEC and EFTA. The situation which prevails today may well be out of date in a few months' time. Nevertheless a certain basic pattern is already emerging, one which will probably remain fairly constant. A description of the EEC and EFTA groups as they stand today is therefore included. The efforts of the East bloc to co-operate within the Komekon compass, will also be illustrated according to information available. The influence of the new commercial policy upon the raw-wood trade must evidently be analysed in a separate chapter.

The effect of customs tariffs and restrictions, present and future, is of great interest. The market groups mentioned above lead to some new common views on the raw-wood market within the scope of the European economy.

After throwing light upon the question of the raw-wood trade in Europe, there only remain the conclusions to be drawn with regard to its future development.

2. Raw-wood trade during the 1950's statistically illustrated

21. Definition of raw wood and the raw-wood trade

It proves to be rather difficult to define the products of primary forest felling by a single word. The term »roundwood» seems at first to be suitable, but on studying term definitions used by FAO in its statistical publications, we note the following about the word roundwood (FAO 1959 p. 135): »All wood prior to primary processing but including split fuelwood and split pulpwood». Examples given are: fuelwood, sawlogs, veneer logs, logs for sleepers, pulpwood, pitprops, poles, piling and posts.

The term roundwood therefore, is taken to include split wood, and furthermore fuelwood can include sawdust. Thus the awkward situation arises that wood which is not round at all still goes under the name of roundwood.

At first sight also, »unrefined timber» seems to be a feasible term. According to PÖNTYNEN (1932 p. 7) this covers: »Pyöreitä runkoja tai rungon osia, halkaistuja ja pälkittyjä ynnä veistettyjä tavaroita, . . .» (*Round trunks or part of trunks, split and rough-hewn and trimmed timber.*) Evidently primary timber production in the forest also includes products that have passed through first stage conversion — hewing or similar processes — and have thus definitely lost their round form, without refining having gone so far that they can be transferred to a »refined» class. Collectively calling such timber unrefined does not seem very desirable. Consequently neither »unrefined» wood nor »roundwood» are to be recommended as collective terms for primary wood production in the forest.

The term raw wood (raw timber) seems more suitable. HOLOPAINEN (1957 p. 1) makes a distinction between raw wood, covering all products from the forest, and those of the wood industry which are comprehended under the term »puutyösteet». This classification as such is good, but leads to the anomaly that industrially manufactured sleepers, for example, must be regarded as »puutyösteet». It does not seem possible to make such a distinction when analysing the international raw-wood trade.

HOLOPAINEN (1957 p. 3) divides raw wood into the following categories according to the use to which it is put:[1]

[1] Cf. SPEER's classification of Rohnutzholz, covering Stammholz, Grubenholz and Faserholz.

Industrial wood	
Large-sized industrial wood	Sawlogs
	Veneer logs
	Poles
	Sleepers
Piled industrial wood	Pulpwood
	Pitprops
	Fibrewood
	Bobbin wood
Fuelwood	Firewood
	Firewood lengths

There can be no objection to his classification, but since statistical analysis in this investigation is being based on FAO publications, it is more practical to follow the classification of this organization. We must therefore distinguish between the following categories (Yearbook of Forest Products Statistics 1959 pp. 134—135).

Fuelwood: (241—01)[1] »Wood to be used as fuel for purposes of cooking, heating, production of power, etc.» This comprises wood for charcoal, pit kilns and portable ovens and can include wood from trunks and branches. It should also be pointed out that the statistics published include sawdust.

Sawlogs, veneer logs and logs for sleepers (242—02,03) are in a group of their own, being defined as follows: »Solid volume (excluding bark) of logs destined for sawing and for the manufacture of sleepers and of veneers. Logs transformed into hewn wood (exepting hewn railway sleepers) and roundwood for the manufacture of staves (cooperage) and shingles are also included.» The following group is classified as pulpwood (242—01): »Coniferous and broadleaved wood destined for defibration or pulping by mechanical, chemical or combined means.» This classification can also include wood waste, but not sawdust.

Pitprops: (242—04) »All round timber used in mining operations.» Here FAO specially points out that sawn props are included in the sawn goods category.

Poles: (242—09 part) »Straight pieces taken from the trunks of trees and more than 3 metres in length.» These poles are mainly used to support telephone, telegraph and electrical transmission lines and scaffolding. Poles of different sizes can also be used for house building.

Piling: (242—09) »Long straight pieces cut from trunks of trees and usually destined to be driven into ground under impact.» Pilings are mostly used for the construction of harbour works and as support for bridges and buildings.

Posts: (242—09) »Round, hewn, squared, or split wood, usually less than 3 metres in length, used for fencing.»

[1] The figures are those of the Standard International Trade Classification.

The last group comprises Sleepers (243—01), defined as: »Pieces of wood of more or less rectangular section laid transversely on the railway road-bed to support the rails. Can be sawn or hewn».

From the above it can be seen that round, split and hewn timber are included in these definitions. All these groups together form »raw wood», no distinction being made between the processes by which the goods have been produced. The different types of raw wood can be exported barked, semi-barked or unbarked. This makes it rather difficult to collect statistics from different countries. We feel that a critical examination of the conversion factors used by FAO, lies outside the scope of this investigation. However, FAO (Yearbook of Forest Products Statistics 1958 p. 157) itself states that: »Technological developments of the past decade, however, have made several of these factors out of date, and the need for a general revision is recognized.» The following figures for the 1950's have been used to establish the statistics in cubic metres solid volume of raw wood (Yearbook of Forest Products Statistics 1959 p. 141).

Table 1. Raw-wood conversion factors used.
Taulukko 1. Käytetyt raakapuun muuntoluvut.

Product *Puutavaralaji*	Unit *Mittayksikkö*	Average weigt shipped by rail kilos *Rautateitse kuljetetun tavaran keskipaino* *Kg*	Kilos per m³ *Kg/m³*
Sawlogs			
Coniferous	1000 board feet	3 300	
	m³	650	650
Broadleaved	1000 board feet	5 100	
	m³	975	975
Pulpwood	Cord	1 300	
	Stere	350	500
Fuelwood-mixed	Cord	1 800	
	Stere	490	700
Pitprops	Fathom	2 700	620
T & T Poles	1 piece-European	110	650
Sleepers			
Coniferous-Type A[1]	1 piece	62	
Coniferous-Type B	1 piece	52	620
Broadleaved-Type A	1 piece	90	
Broadleaved-Type B	1 piece	75	900

The difficulty of establishing these statistics can easily be appreciated if it is borne in mind, how the degree of moisture in a tree affects its weight and how much different tree species vary in specific weight. Or, for instance, how to estimate the average dimension of a pole? The statistical results will naturally

[1] Type A average 10 pieces to the cubic metre, type B 12 pieces.

Table 2. Raw-wood measurements.
Taulukko 2. Raakapuun mittayksiköt.

Product *Puutavaralaji*	Unit *Mittayksikkö*	Solid volume without bark m^3 *Kiinteä tilavuus kuoretta* m^3
Roundwood (general)	m^3	1
	cubic foot	0.0283
	Load	1.13
Sawlogs	1 000 board feet / 1 000 super feet	4.53
Pulpwood	Cord (128 piled cubic feet)	2.55
	Stere / Raummeter coniferous	0.75
	Russian fathom	6.80
Fuelwood	Stere (coniferous)	0.70
	Stere (broadleaved)	0.65
	Cord (128 piled cubic feet)	2.12
	Russian fathom	5.66
Pitprops	Fathom (216 piled cubic feet)	4.28
	Göteborg standard (180 piled cubic feet)	3.398
	Cord (128 piled cubic feet)	2.416
T & T Poles North America	1 000 linear feet	15.4
	1 piece	0.43
Europe	1 piece (coniferous)	0.165

vary considerably depending on the conversion figures used, but the overall tendency should nevertheless emerge.

The quality demands of the different raw-wood types will not be analysed in this investigation.

According to MANTEL (1942 p. 589), raw-wood markets can be divided horizontally in the following way:

1. Local timber markets
2. Regional markets
3. National markets
4. International markets.

Timber trade within the first three groups depends on forest resources and the location of population, transport conditions and so on. The international timber market is also affected by politico-commercial factors, customs tariffs and restrictions. This investigation is only concerned with the raw-wood trade from an international point of view, though naturally in this connection it may be necessary to study national and regional conditions.

The utilization of wood can be divided into three phases:

1. Primary use of forest felling products
2. Waste from this first conversion phase
3. Further conversion from semi-refined goods.

The raw-wood trade mainly deals with the primary products of the forest, and in this investigation we will concentrate on this part. Only when our statistics include waste wood shall we be obliged to take it into account.

22. Market survey

Before the statistical analysis of the raw-wood trade, a short survey will be given of the general characteristics of the European market, and the trends apparent during the 1950's. Trade in refined forest products, building activity and coal production naturally have a considerable effect on the raw-wood trade. A certain slowness in reaction occurs, however, depending on the stock-piling situation in the import countries. To extend this survey to cover all these areas would obviously be excessive. A general survey with the emphasis on the raw-wood trade to form the background for the analyses in the next chapter seems, however, reasonable. The economic aspect of Europe is to a great extent dependent on conditions in the United Kingdom, France and W. Germany, which together represent 2/3 of the gross European product and 40% of the internal European trade. The market for forest products is, in its turn, dependent on general economic development in these countries.

The new decade began with flourishing market conditions. The worst of the war damage had been repaired and the rebuilding programmes had begun in earnest. As early as 1949, fellings in several important countries had reached record figures and for the first time since the second world war the demand for timber seemed to have been satisfied. The abnormal conditions on the timber market brought about by the war had also begun to disappear. For example the export of coniferous logs from W. Germany, which still amounted to 1.4 million m^3 in 1949, had shrunk to 260 000 m^3 in 1950, and later dwindled away to practically nothing.

With the Korean war, the demand for all raw materials grew on account of both industrial expansion and stock-piling for the event of world war. Industrial production in Europe rose to 13% higher than the previous year and exceeded the pre-war level for the first time.

The timber trade also entered this general rush and prices rose rapidly as a result. In spite of increased felling and intensification of production, supply could not keep up with demand. This led to competition between different raw-wood types, as a certain variety of spheres of utilization becomes possible when price is no longer the decisive factor.

The supply of timber in Europe during this year proved to be surprisingly elastic when it is remembered that the felling programme for 1949—50 had been almost completed before the Korean war started. For example, sawn goods exports exceeded forecast estimates by no less than 500 %.

Only in the case of the trade in coniferous logs did any stagnation appear. This was due to the earlier mentioned reduction of exports from W. Germany. Although Swedish imports from Finland rose from 161 000 m³ in 1949 to 288 000 m³ in 1950, total European imports sank from 2.0 million m³ to 1.2. Nor was there any increase in pitprop exports, but exports of pulpwood on the other hand rose considerably, as indicated by the following figures in 1 000 m³:

	1949	1950
Pitprops	2 785	2 278
Pulpwood	2 584	3 065

European imports of coniferous sawnwood from the USSR and overseas amounted to 391 000 stds, while the corresponding export to countries outside Europe was 351 000 stds. In other words these figures almost balanced each other. The movement towards higher prices during the first half of 1950 seemed more the result of speculation, but towards the end of the year a real demand asserted itself because of increased industrial activity. Without doubt the sharp rise in prices in Europe was triggered off by the rise in prices in Canada, where the market was directly influenced by the building activity in the USA. Since Timber Control in the U.K. had paid high prices for Canadian timber in August, Scandinavian exporters followed Canada's example. Prices moved sharply at the autumn auctions in Sweden and Finland, those of saw logs rising almost 75 % above the 1949 level.

The year 1951 continued as a record year for both industrial production and the value and volume of trade. The raw-wood trade attained a new post-war record and came close to pre-war figures in volume. The volume of the timber trade increased by 25 %, but in value it doubled the 1950 figures. By the end of the year signs of weakness began to appear.

Log felling did not entirely achieve the 1950 volume, but the production of pitprops and pulpwood was larger. The decrease in the felling of timber for sawing seems to have been caused by the unprofitable market opportunities in the U.K. in 1952. The increase in pitprop and pulpwood production mostly took place in Sweden and Finland, where reserves of fuelwood were also gathered during the year.

Consumption during 1951 was about the same, but as several importing countries had bought large quantities of pulpwood because of the Korea boom, stocks grew considerably. On the other hand there seem to have been difficulties in piling up pitprop stocks, evidently on account of keen competition with pulpwood. Stocks of coniferous sawnwood in the U.K. increased by almost 350 %. Consumption in the building industry decreased, but was compensated for in other branches, especially the packing industry.

Prices rose violently; the first raw-wood sales for the 1951—52 season brought

100 % or greater increases in the Nordic countries. Later they fell to a mere 50—60 % higher than those of the previous year. In contrast to the fluctuation in N. Europe, prices in Central and W. Europe rose steadily during the whole year. Attempts to stabilize the prices by mutual agreements between forest owners and the industries were made in several countries. Sawnwood prices also appear to have been stabilized towards the end of the year at £ 90—91 for 7″ u/s redwood battens. The fall anticipated in U.K. imports during 1952 was compensated by production limitations in the exporting countries.

The U.K. doubled her sawnwood imports in 1951 (1.6 million stds as against 0.8 million stds in 1950). Total pulpwood import reached a record with 5.2 million m³ in 1951 as against 2.7 million the previous year. Imports increased particularly in France, W. Germany, the Netherlands and Switzerland. Imports in the E. European countries, too, were 60 % higher than the previous year.

The increase in the trade volume in 1951 was covered mainly by increased exports from Sweden and Finland and, to a certain extent, by Canada's exports to the U.K. At this stage the E. European countries had not yet attained any significance as exporters. Pulpwood exports from W. Europe to E. Europe, for instance, exceeded the exports from the latter to the former. There were signs, however, that rebuilding of war damage was near completion and that timber production was expanding to the extent that exports could be expected in the near future. (Cf. Timber bulletin for Europe 1952 p. 58.) The following figures will give some idea of the raw-wood trade between Eastern and Western Europe at this stage:

Exports of pitprops from E. Europe to W. European countries amounted to 304 000 m³ in 1951 as against 408 000 m³ in 1950, while the corresponding exports of pulpwood were 185 000 m³ as against 170 000 m³. Exports in the opposite direction, i.e. from West to East, totalled 21 000 m³ for pitprops in 1951 and 24 000 m³ in 1950. On the other hand much more pulpwood was being exported — 334 000 m³ in 1951, as against 211 000 m³ in 1950. The corresponding figures for Canadian exports to Europe during the years 1950 and 1951 were in 1 000 m³:

	1950	1951
Pitprops	47	219
Pulpwood	93	763

At the end of 1951 the market was rather quiet. The export countries that had sold 40 % of their production during the same period in 1950 had not been able to conclude transactions for delivery during the following year. On both sides a »wait and see» attitude was adopted.

The timber market during 1952 slowly followed the general trend in industrial production and European demand. The high prices at the end of 1951 gradually affected consumption, a general fall in consumption occuring towards summer

1952. During the latter part of the year the demand of the timber industry appeared to grow a little, but the year as a whole never reached the 1951 level. Production seemed thus to have been stabilized to what might be called a normal level. The reserve of orders in the paper industry was weak during the whole year.

The cost of living continued to rise in most European countries, while raw material prices displayed an opposite tendency. Prices of all wood products sank considerably with the result that the total trade value fell. For the raw-wood trade, in particular, this meant a stagnant market and falling prices during the first half of 1952. Later there seems to have been a greater demand for sawn goods, though that of raw wood and other forest products remained weak. Total fellings were considerably reduced especially in the Northern export countries, where they decreased by 10—12 million m³. In the import countries, though, fellings seem to have remained unchanged or even risen, the latter especially in the case of pulpwood and pitprops. This development was evidently a result of the high prices on imported goods. It is interesting to note the considerable increase in the felling of broadleaf trees on the Continent.

Timber consumption was low in 1952. The market for sawn goods did not follow the increase in building activity as evidently the use of substitute materials had begun to play a prominent part during 1951, when timber prices were excessive. In the packing industry too, other materials had won a market at the expense of wood. The consumption of pulpwood decreased rapidly because of the limitations imposed on cellulose and paper production. The demand for pitprops stayed at the 1951 level, in spite of increased coal production during 1952. This was due to the greater economies practised at the mines. The timber stocks at the end of the year were satisfactory in most countries. Raw-wood prices fell by 30—40 % in the export countries. Examples of the general price level were $ 9: 50—10: 50 per stere f.o.b. for semi-barked spruce pulpwood, and 420—450 shillings per fathom f.o.b. for pitprops.

On account of the high price of sawn goods in the Nordic countries in 1951, Central European suppliers improved their hold on the market. Prices fell very fast in the beginning of 1952, but rose again later towards the end of the year so that the price level seemed high in comparison with other competing materials. Finnish war reparations to the USSR were finally paid off at this time.

Raw-wood imports during 1952 totalled 14.4 million m³, as against 12.0 in 1951. Pulpwood fell from 5.2 to 5.0 millions while imports of pitprops increased from 2.5 to 5.3 million m³. The import of sawn logs came down by about 10 %. There was a slight increase in trade between E. and W. Europe. W. European purchases of pulpwood from the eastern countries totalled 257 000 m³ as compared with 183 000 m³ the previous year. Imports in the opposite direction amounted to 334 000 m³ in 1951 and 324 000 m³ in 1952, Finland being especially prominent as an exporter. The import of pitprops from the East bloc increased a little, while trade in the opposite direction remained relatively unchanged in

volume. A slow increase in the yearly supply from the eastern countries was noted with the Soviet Union in the lead. Western Europe's import from countries outside Europe, principally Canada, rose steadily in 1952, amounting to 1.4 million m³ of pitprops and almost 1.0 million m³ of pulpwood. On studying the export statistics for the latter year, the following figures are noted in 1 000 m³:

	1951	1952
Pitprops	2 332	4 333
Pulpwood	4 543	3 588

In spite of the weakness of the timber market at the beginning of 1952, it subsequently recovered to such an extent that at the end of the year the situation was much better than in 1951, especially with regard to sawn goods. Most of the 1953 production of sawn goods had thus already found markets. The raw-wood market was evidently much quieter; very few business deals for the following year had been concluded. Both in price and volume, the timber market seemed to have stabilized somewhat belove 1951 figures. The effect of the Korean crisis was a thing of the past.

The favourable economical situation in most European countries in 1953 led to a growth in the demand for forest products, which increased trade. The growing market for raw wood was proportional to the greater activity of the wood industries. On the other hand there was no sign of any growth in consumption per capita. Selling prices and raw material prices in general were falling, but not timber prices. Having reached rockbottom in 1952, they were climbing again.

Fellings of industrial wood in 1953 have been estimated at a little under the level of the previous year. There seems to have been a decrease in the Nordic countries especially. On the other hand, fellings in Austria were up by 10 %, while Jugoslavia showed a decrease of 1 million m³. Towards the end of the year the fellings seem to have increased again in Central Europe, owing to a rise in demand and favourable weather.

At first the increase in demand was satisfied by existing stocks in the import countries, but by the end of the year these had diminished. In the U.K. purchasing permits were abolished, which enabled consumers to increase their sawn goods stocks for the first time since the second world war.

In several countries industrial activity seems to have expanded faster than the consumption of sawn goods. The pulpwood market grew with the production of wood pulp during 1953 but the consumption of pitprops fell with the decline of coal mining. The economies mentioned earlier were still being practised.

Trade in wood products showed an expansion on the internal European market, while the external market fell sharply. Austria increased her exports of sawn goods and was achieving an evergrowing position as one of the leading export countries. East-West trade was also rising in volume. In spite of this

lively trade in wood products in general, the raw-wood trade fell off. Thus the export of pitprops decreased from 4.3 million m³ in 1952 to 2.6 in 1953. Even pulpwood fell from 3.6 to 2.7 million m³ and coniferous log exports from 1 035 000 to 780 000 m³. These reductions were particular detrimental for Finnish raw-wood exports.

The U.K. and W. Germany imported less pitprops and all other countries less pulpwood than during the previous year, though the U.K. imported 460 000 more stds of sawn goods. A tendency noted was the difficulty of placing sawn goods of lower quality. This resulted in a general effort to find new ways of utilizing such lower-quality goods.

The abolition of import controls and — a year later — of purchasing permits in the U.K. seemed to have no effect on prices.

Export prices of pulpwood and pitprops remained unchanged during most of the year but rose in the last few months by 10—15 %. The price for semi-barked spruce pulpwood was $ 10: 50—11: 50 per stere f.o.b. Even though on the whole prices had fallen to a pre-Korean level, lost markets were not regained.

The general economic situation in Europe during 1954 was fully satisfactory. Industrial production rose by 8 % over that of 1953 and the trade in both raw-wood and refined products increased in volume. The building trade was generally active and the cost-of-living indexes in most countries showed only small changes, which indicated a stable price level. The pulpwood trade rose 70 % above the previous year's figures and led to large-scale imports from Canada, as the Scandinavian countries could not satisfy the whole demand. The consumption of coniferous sawn goods was 10 % higher than in 1953. This increase was partly covered by increased production in the import countries and partly by wider imports. The long-term prospects of the market for sawn goods were not very promising though. In 1948—1951 the consumption of coniferous sawnwood stood at an average of 9.4 million stds. In 1952 it went down to 8.75 and rose to 8.9 in 1953. Thus the 1954 consumption was only slightly higher than the 1951, and this despite the fact that during this period industrial production in W. Europe had risen by 13 % and the building activity by 50 %. It indicated that the utilization of sawn goods per unit of output was falling off, a fact which has later been proved by special investigations.

The raw-wood trade followed the general economic current — expanding powerfully. Thus the export of coniferous logs rose to 884 000 m³. Finnish and Swedish export of pulpwood and pitprops, in particular, rose very high. In volume, too, the import of pulpwood also grew rapidly in all countries. Pitprop imports seem to have risen only 10 %. The import of coniferous sawnwood from Canada rose from 295 000 to 424 000 stds.

In December 1954 Austria placed a still more severe embargo on exports; no more raw wood was to leave the country except that already contracted for under existing trade agreements.

Prices in 1954 were steadier than they had been for many years. They rose at the first autumn auctions in Finland, it is true, but when consumers reacted negatively towards the higher prices, the level fell back. At the end of the year the pressure to increase prices grew ever more powerful, especially in Central Europe where sawmills and pulp factories were competing for raw material.

Economic expansion continued throughout Europe during the whole of 1955. It was a good year for the wood industry. A high level of free trade had gradually been attained in W. Europe, and this reduced the need for imports from outside Europe. By the end of the year the sawn goods market seems to have halted, while the demand for raw wood and paper products continued. Credit restrictions were imposed by several governments to prevent inflation. These precautions which led to higher rates of interest made the importers' position a difficult one, especially as freights had gone up too. The British market partly collapsed after it was officially announced that 150 000 stds of strategic reserves were to be freed the following year. Actual export selling prices remained stable the whole year, but freightage affected import prices. The unfavourable development of prices of sawn goods from the consumers' point of view is illustrated by the fact that during the period 1950—55 they rose by 53 % in the U.K., whereas the price of basic raw materials only went up by 10 %. In France the situation during this period was even worse: coniferous sawn goods were up by 350 %, other raw materials by 30 %.

New export records were set during 1955 when pitprop exports rose to 3.0 million m³ (22 % more than the previous year), and pulpwood exports to 5.7 million m³ (40 % over the previous year's figures). Exports of logs amounted to no less than 1.9 million m³. During this year, the Soviet Union re-entered the market as a large-scale exporter of pulpwood.

In 1956 the timber market was characterized by a smaller trade volume than during the previous year. The market for paper products, however, was lively. The Suez crisis and its consequences seemed not to have affected the internal European market to any great extent.

In spring 1956, the Austrian forest survey showed that the forests had been seriously overcut during the previous ten years. Felling would have to be cut down by at least 2 million m³ annually. Inevitably the consequences for the hitherto large-scale Austrian export of sawn goods would be serious.

At the end of 1956, sales of sawn goods made a considerable recovery, as stocks had apparently diminished in the import countries and prices had been stabilized. The Soviet Union began to push large quantities on the U.K. market. Canadian exports had run into difficulties owing to high freight rates. In March 1957, when freights temporarily dropped, Canada was able to offer her products considerably cheaper than the Scandinavian countries and the USSR.

In 1956 Finland suffered serious economic difficulties that weakened her posi-

tion on the timber market and gave Sweden and the Soviet Union a chance to gain ground. There was a strong demand in Italy and the U.K. for Austrian sawn wood. The re-opening of the Suez canal in April brought an increased demand from the Middle East, where a part of Austria's production was sent.

It appeared that the consumption of coniferous sawn wood in Europe was approximately 11.2 million stds. Bearing in mind the stock situation the year before, the real consumption in 1956 was a little less. The manufacture of timber products in Europe decreased in comparison to 1955. Thus the production of sawn goods in Finland fell by 10—15 %, though in Central Europe the development was a little more favourable.

Commercially speaking, similar trends can be seen. Imports of sawn goods, amounting to about 3.8 million stds in 1955, came to a mere 3.3 stds in 1956. Canadian imports fell likewise from 439 000 to 250 000 stds. The Finnish export volume for wood products was 18 % lower than in 1955. Deliveries from Sweden, Austria and the Soviet Union underwent smaller changes.

6.8 million m³ of pulpwood was imported, as against 7.0 millions in 1955. The import volume of pitprops fell from 4.8 million m³ to a bare 3.6 million m³. The fall in export volumes was not quite so pronounced, owing to the reduction of imports from Canada which made it possible for the internal European trade to keep itself afloat.

The export prices for pulpwood and pitprops remained relatively unchanged with only a slight fall at the beginning of the following year.

The timber market during 1957 was rather weak. Stagnation in W. European industry and recession in the USA fostered caution. Building fell off both in W. Germany and in the U.K. (in the U.K. for the third year running). In France the peak seemed to have been reached this year, and it seemed as if the apex had been reached everywhere. This decline of building activity naturally meant a decrease in the use of sawn goods. The consumption of wood for export packing als fell off on account of the recession in the USA.

The cost of living, wholesale prices and salaries rose continuously though slowly in most countries. This raised production costs and reduced the profit margin because retail prices remained constant. The raw-wood market weakened still further towards the end of 1957, when both demand and prices fell. This development was expected to become more accentuated during 1958, along with the anticipated stagnation of the paper industry. Pulpwood prices came down by about 20 %, thus, for the first time in many years, falling below the level of pitprop prices — i.e. pulpwood (barked spruce) $ 9—9: 30, pitprops $ 9: 50. This remarkable situation led to pulpwood being sold as pitprops.

Prospects for 1958 appeared gloomy in the extreme. The paper industry had expanded beyond the demand, and the sawmill industry had already been running to excess capacity for a long time.

The year which opened under the shadow of depression in America and

seemed to bode ill for European industry, ended on a more optimistic note. During the second half of the year it became evident that the situation in the USA did not greatly effect Europe, where a relative stability of prices prevailed. Other factors leading to improvement were the moderation shown in demands for higher pay and the cutting down of stocks. During the first three-quarters of the year, building activity fell off, but at the end of the year a turn for the better was evident. In the U.K. a fine market opened up for the furniture industry after hire-purchase restrictions were lifted during the last quarter of the year. The average increase in industrial production between the years 1956—58 was 5 1/2 %, but great dissimilarity was to be found between different countries.

The European Economic Community (EEC) customs union was founded during the year, though this significant event in the political economy of Europe did not immediately affect the raw-wood market.

Total wood consumption decreased a little during 1958. In particular, the pitprop market fell considerably on account of the drop in coal production in many countries, while the market for pulpwood remained about the same as during the previous year. Imports of tropical wood increased, and this affected the demand for beech and oak in the Central European countries. Beech is the most extensively used broadleaf wood in Europe and much of it comes from Eastern Europe (Yugoslavia, Czechoslovakia and Bulgaria). There used to be a fairly large export of French beech, this had been reduced by competition from E. Europe, which lowered the price of beech in France.

The production of pitprops fell by 1 million m³ to 15.7 millions. Pulpwood production was also rather stagnant because of the cutting down of cellulose manufacture. The production of sawn goods increased in Sweden and Finland enough to balance the decrease in the rest of Europe. There can be no doubt that the devaluation of the Finnish mark in September 1957 contributed to easing sales. The trade volume of almost all wood products fell. While imports of sawn goods decreased everywhere else, in the U.K. there was a large market open for Russian supplies, resulting in Exportles making several new offers. But on the other hand the pitprop imports fell by a third, and in Belgium they were reduced to a half. Pulpwood imports were down too, though not as much as those of sawn goods. The drop hit the Swedish and Finnish forest economies first of all. Prices of most raw-wood categories went down, parly due to the large supply from Finland and the Soviet Union. Pitprop and pulpwood prices fell to quotations below those prevailing before the Korean war, i.e. to $ 8 per m³ f.o.b. for semi-barked spruce pulpwood as compared with $ 10 or more a year earlier.

The freight rates were the lowest since 1950, so the c.i.f. prices of all forest products fell even further. Freight fluctuations are illustrated by the following figures: (Monthly Bulletin of Statistics March 1959 p. XVIII)

Index of ocean timber freight rates (trip charter, United Kingdom).

	1953 = 100		
1950	98	1955	177
1951	203	1956	189
1952	137	1957	147
1953	100	1958	98
1954	114	1959	106

In spite of the considerable drop in the prices of sawn goods, there was no sign of increasing consumption. This seemed to prove that the share of sawn goods in total building costs was now so small that it did not particularly affect the calculations. Log prices also fell by 10—12 %. The free convertibility of the W. European currencies, which was brought about in December 1958, was expected to stimulate trade during subsequent years.

At the beginning of 1959, the timber trade still seemed to be on the decrease, but by the second half there were signs of a recovery. There was a vigorous upswing in building activity in Europe as compared with the year before. The trend has continued in an accentuated form and the 1950's ended on a very optimistic note. In W. Germany 600 000 dwellings are estimated to have been completed. It has been calculated that building will continue undiminished for another 3 years, during which time 500 000 dwellings are to be erected annually.

The index of industrial production rose to 116, against 105 at the end of 1958. The cost of living remained very stable. On the British home market the demand from timber merchants and consumers for timber was high. In autumn, the European Free Trade Association (EFTA) was founded in Stockholm and it was decided that the agreement was to come into force as of 1 July 1960.

The unexpected import demand which arose at the end of 1959, could be met thanks to the large reserve stocks in Sweden and Finland. In contrast to the usual run of events, there was no fall off in trade whatsoever, not even towards the Christmas and New Year holidays; the new decade opened lively. Freight rates during the whole of 1959 were at a low level except for seasonal rises. Attempts to keep timber freights at a higher level through the intermediation of »Eutra» failed completely, and the organization broke down in April. During the last quarter the freights for early shipments rose by 20—30 shillings per stds.

It is estimated that the total felling dropped somewhat under the 1958 level on account of the uncertainty prevailing in the timber trade in the beginning of the year. The Nordic export countries, in particular, reduced their cutting programmes. Poland and Czechoslovakia did likewise, but motivated by long-term forest planning with regard to progressive yield from the forests.

Economic difficulties in coal production continued throughout the year and led to further limitation of the number of mines. Pitprop production therefore

fell 5 % under the 1958 level. On the other hand, trade in products of the wood industry set new alltime records, which are reflected in the growth of the trade volume. Sweden exported over 1 million stds of coniferous sawnwood, Finland and the USSR being close runners up with 937 000 and 900 000 stds. Austria, too, was among the leaders with 716 000 stds, in spite of the discouraging figures the State forest survey had published, indicating that fellings were far in excess of what the country's forests could reasonably stand.

It has been calculated, however, that the European total production of coniferous sawnwood did not exceed 10.4 million stds. This was due to the gap between market and production. The corresponding imports for some important countries in 1958—59 are illustrated by the following figures:

Imports of coniferous sawnwood (excl. box board) in 1 000 stds.

	1958	1959
Great Britain	1 247	1 461
W. Germany	585	615
Netherlands	336	421
Italy	389	420
Denmark	129	172
France	163	170
Belgium	130	151

Total imports rose from 3.6 to 3.8 million stds. As a comparison, can be mentioned that USA imports in 1959 came to 1.8 million stds.

As for raw wood, it should be pointed out that trade in logs broke all records, especially as regards broadleaved logs. France, with its lively economic activity following on successful devaluation of the franc in January, was the main contributory factor in this respect. Total European pulpwood exports also showed an increase, though the record level of 1955 was still far out of reach. On the other hand the pitprop trade fell off proportionally to coal production, the same downward trend being noticed in regard to sleepers.

On the subjects of raw-wood trade prospects in the near future, during the new decade, FAO (Timber bulletin for Europe 1959 No. 4 p. 76) writes: »Despite voices warning against over-expansion with possible inflationary consequences, the timber market, at the close of the first quarter of 1960, shows a prudent optimism based on steady demand and correspondingly well-balanced supplies».

To give a better comprehensive survey, and to throw light on the framework within which development has taken place during the 1950's, the following tables have been compiled:

We will revert to these tables in later connections.

After these all round views on the European timber market during the 1950's, we shall in the following more thoroughly examine the raw-wood trade.

Table 3. Total fellings of wood in Europe 1950—59 in million m³.

Taulukko 3. Kokonaishakkuut Euroopassa vv. 1950—59, milj. m³.

Year *Vuosi*	Logs *Tukit*	Pulpwood Pitprops *Paperipuu Kaivospuu*	Other industrial wood *Muu ainespuu*	Total industrial wood *Ainespuu yhteensä*	Fuelwood *Polttopuu*	Total fellings *Kokonaishakkuut*
1950	92.5	45.8	13.1	151.4	106.3	257.7
1951	85.7	54.5	11.0	151.2	94.8	246.0
1952	78 9	59.8	11.3	150.0	89.8	239.8
1953	83.6	50.5	11.4	144.9	99.4	244.3
1954	99.1	58.9	11.4	169.4	94.4	263.8
1955	114.3	62.5	19.6	196.4	105.1	301.5
1956	108.3	66.3	19.8	194.4	106.3	300.8
1957	103 4	71.8	20.9	196.1	108.1	304.2
1958	104.5	68.5	20.4	193.4	101.7	295.1
1959	104.9	67.3	21.1	193.3	105.3	298.6
Average — *Keskiarvo*	97.5	60.6	16.0	174.1	101.1	275.2

Table 4. Production and trade of coniferous sawnwood in Europe 1950—59 in 1 000 stds.

Taulukko 4. Havusahatavaran tuotanto ja kauppa Euroopassa vv. 1950—59, 1 000 std.

Year *Vuosi*	Production *Tuotanto*	Imports *Tuonti*	Exports *Vienti*	Apparent consumption *Arvioitu käyttö*
1950	10 020	2 290	2 480	9 830
1951	10 150	2 935	2 742	10 343
1952	9 610	2 519	2 470	9 659
1953	10 190	3 046	2 988	10 248
1954	10 720	3 441	3 186	10 975
1955	11 130	3 787	3 295	11 622
1956	10 830	3 300	3 007	11 123
1957	10 625	3 800	3 162	11 263
1958	10 600	3 565	2 917	11 248
1959	10 445	3 827	3 243	11 029
Average — *Keskiarvo*	10 432	3 251	2 949	10 734

Table 5. Production and trade of broadleaved sawnwood in Europe 1950—59 in 1 000 m³.

Taulukko 5. Lehtipuusahatavaran tuotanto ja kauppa Euroopassa vv. 1950—59, 1 000 m³.

Year *Vuosi*	Production *Tuotanto*	Imports *Tuonti*	Exports *Vienti*	Apparent consumption *Arvioitu käyttö*
1950	9 320	1 621	1 179	9 762
1951	9 310	1 576	973	9 913
1952	8 950	1 066	582	9 434
1953	9 170	1 215	860	9 525
1954	9 220	1 404	1 038	9 586
1955	10 690	1 775	1 178	11 287
1956	10 695	1 604	966	11 333
1957	10 800	1 743	1 088	11 455
1958	10 950	1 714	1 070	11 594
1959	10 975	1 703	1 152	11 526
Average — *Keskiarvo*	10 008	1 542	1 009	10 542

Table 6. Production and trade of wood pulp in Europe 1950—59 in 1 000 tons.

Taulukko 6. Puuvanukkeen tuotanto ja kauppa Euroopassa vv. 1950—59, 1 000 tonnia.

Year *Vuosi*	Production *Tuotanto*	Import *Tuonti*	Export *Vienti*	Apparent consumption *Arvioitu käyttö*
1950	8 530	2 960	3 910	7 580
1951	9 430	3 240	3 980	8 690
1952	9 360	2 710	3 190	8 880
1953	10 030	3 200	4 000	9 230
1954	12 530	4 120	4 370	12 280
1955	12 915	4 750	4 700	12 965
1956	13 515	4 720	4 970	13 265
1957	14 320	4 975	4 900	14 395
1958	14 180	4 955	4 825	14 310
1959	15 171	5 204	5 341	15 034
Average — *Keskiarvo*	11 998	4 083	4 419	11 663

23. Trade according to quality and quantity

Unless otherwise stated, the statistics presented here are based upon the following publications: FAO's Yearbook of Forest Products Statistics and Timber Bulletin for Europe, which is published jointly by FAO and ECE (Secretariat of the Timber Committee of the United Nations Economic Commission for Europe). Not all figures for 1959 are available from FAO at the time of this investigation, but as far as possible the material has been completed from other sources. These figures and those of FAO for 1959 must be considered preliminary and open to further adjustment. All volume measures are given in solid volume of roundwood without bark if not otherwise stated.

The term »coniferous» covers all wood from trees botanically classified as gymnospermae, while »broadleaved» refers to angiospermae.

Transit consignments are not included in the export figures. As a rule, this also applies to the import figures, which only cover goods for home consumption or further refining. Imports that are later re-exported may, however, be included. The information on the United Kingdom comprises England, Wales, Scotland and Northern Ireland. Export figures of countries with dependencies may include exports to these territories. The figures for Europe include both the Western and Eastern countries with the exception of the USSR.

The basic difficulties involved in compiling such statistical material from different countries, which have already been mentioned in the previous chapter, are still greater when dealing with international trade statistics. Different customs classifications, valuations and trade »usages» produce divergences in each country. It is often difficult to distinguish statistically between pulpwood and pitprops because of their similarity in sizes and interchangeability in use. The French customs, for instance, have only considered pulpwood from broadleaved

species as a separate customs item since 1 January 1956. It was formerly counted as fuelwood. This leads to anomalies such as an export country's figures not corresponding with those of the import country. Since the adoption of the Brussels nomenclature by all the W. European countries, at least customs classifications can be considered compatible.

In the statistics of FAO there are great differences in the total European import and export figures, evidently on account of the difficulty of obtaining official material from many of the East bloc countries. The import statistics are the more accurate in this case, as they are based upon data from W. European countries concerning imports from the East bloc countries.

In considering value statistics, modifications made to exchange rates must also be considered. The use of different clearing rates, in particular, renders comparison on an international scale questionable. This study will accordingly be restricted to analysing changes in trade volume.

The use of mathematical correlations in determining trends in the figures given below is also of doubtful value, partly because of the short period for analysis and partly because the yearly values fluctuate so sharply. Insofar as there is any uniform tendency, it can easily be found from the figures in the decennial series. It may sometimes be advisable to divide the decade into two to bring out the development more clearly.

Starting with exports per country, the following tables are obtained:

Table 7. Exports from different countries of coniferous logs 1950—59 in 1 000 m³.

Taulukko 7. Havutukkien vienti eräistä maista vv. 1950—59, 1 000 m³.

Year *Vuosi*	Finland		Sweden	Norway	Austria	Belgium	France		W. Germany	Europe		USSR	
	E	W	W	W	W	W	E	W	W	E	W	E	W
1950	381	522	32	90	31	48	214	228	278	1 065	1 222	1	1
1951	501	666	30	68	22	135	107	145	43	932	1 133	—	—
1952	673	699	48	65	33	58	46	85	3	967	1 035	—	80
1953	206	272	61	59	6	102	130	151	25	686	777	58	58
1954	259	344	108	61	8	87	195	221	1	771	884	10	60
1955	157	233	102	57	5	166	265	293	5	814	920	61	116
1956	118	137	85	60	9	117	153	160	10	604	631	85	243
1957	113	150	106	41	5	114	150	163	6	650	700	190	652
1958	338	338	146	67	10	88	144	161	8	938	957	222	986
1959	156	156	189	42	13	123	224	236	47	900	928	617	1 139
Average *Keskiarvo*		352	91	61	14	104		184	43		919		334
Average to Europe *Keskimäärin Eurooppaan*		290	90	61	14	104		163	43		833		124

In the above table and in those that follow, countries with large-scale exports overseas (outside Europe) have been allotted a separate column (E) showing their European exports. Others have a single columm (W) indicating their exports to the whole world for the year concerned, while their average annual export to Europe is shown at the bottom of the table. In these cases the difference between world and European averages is seen to be insignificant or non- existent. After the figures on total European exports, there is a column indicating those of the Soviet Union.

As can be seen Finland, France, Belgium and Sweden are the »big four» in coniferous log exports. In 1950 W. Germany was still exporting 280 000 m³ of coniferous logs as war reparations, but in 1952 this export dropped to 3 200 m³ and has remained fairly small ever since. Austrian exports might have been expected to be larger, but severe restrictions have kept them in check. For the same reason the figures for Yugoslavia are also low, though a record of 20 000 m³ was attained in 1953.

Among the second-line exporting countries, Norway leads with an average of 61 000 m³. Czechoslovakia and Switzerland have regularly exported smaller quantities, their average during the 1950's being ca. 47 000 and 15 000 m³. As can be seen, the log export trade is mainly an internal European affair; only 10% represent shipments to overseas countries. The Canadian contribution to Europe has been rather insignificant (average 72 000 m³), while, on the other hand, exports from USSR seem to be rapidly gaining in importance.

The only tendency apparent when comparing the figures for the beginning and the end of the decade is a fall in Finnish exports and a gradual rise in Swedish exports. The other European countries show no clear trends. On the other hand Soviet exports have grown from 60 000 to 986 000 m³ in five years, even if only a small part of this amount has come on to European market.

Canadian exports show great divergences; in 1954 the figures were up to 122 000 m³, but two years later dropped to 14 000 m³. Generally speaking, however, the figures were lower at the end of the decade than at the beginning. Canadian export is obviously dependent to a great extent on ocean freights. The total export of coniferous logs seems to have diminished throughout the world, but the part that has stayed in Europe shows greater stability. In other words, exports to countries outside Europe have decreased. This becomes evident if we add together all the figures for exports outside Europe for the first five years and those for the last five years. They come to 634 000 and 230 000 m³ respectively.

Exports of broadleaved timber have been smaller. They are distributed mainly between the following countries:

Table 8. Exports from different countries of broadleaved logs 1950—59 in 1 000 m³.

Taulukko 8. Lehtipuutukkien vienti eräistä maista vv. 1950—59, 1 000 m³.

Year *Vuosi*	Finland		Sweden	Norway	Austria	France		Belgium	Nether-lands	Europe		USSR	
	E	W	W	W	W	E	W	W	W	E	W	E	W
1950	38	41	1	—	1	239	261	116	5	456	484	—	—
1951	85	92	—	—	—	328	363	156	6	586	632	—	—
1952	59	67	—	4	—	205	230	76	11	361	396	—	47
1953	31	38	5	2	6	326	344	79	16	468	503	1	41
1954	54	60	6	3	9	454	482	88	11	631	669	1	36
1955	46	52	12	—	5	682	712	129	16	893	936	44	44
1956	61	64	11	—	11	405	428	120	14	630	664	41	41
1957	62	71	26	—	22	363	386	125	11	621	660	47	50
1958	27	34	42	—	30	313	339	102	11	540	579	46	46
1959	36	42	9	—	34	459	482	137	12	730	770	10	10
Average *Keskiarvo*		56	11	1	12		403	113	11		629		32
Average to Europe *Keskimäärin Eurooppaan*		50	11	1	12		377	109	11		592		19

France is the greatest exporter of broadleaved sawlogs. A small amount of the French export goes to its African dependencies. Belgium takes second place with an average of over 100 000 m³ annually. Other countries play a relatively small part in the export of this kind of raw wood. As we can see, Finnish exports come to an average of 56 000 m³, while those of Sweden and, in particular, Norway have been insignificant. Europe has imported a yearly average of 34 000 m³ from Canada and 19 000 m³ from the Soviet Union. There are no clear trends to be seen from the figures in the table. It seems as if Swedish and Austrian exports were increasing towards the end of the 1950's. Many European countries have sufficient resources of broadleaved timber of their own, so trade in these species is not as important as the coniferous trade. This however, only holds true for European exports; the picture changes when tropical woods are taken into account, as will be evident when we study imports. The table shows that not even the Soviet Union has succeeded in establishing an export trade in broadleaved timber of any importance. Of the total European export, over 90 % stays within Europe. A slight decrease in exports outside Europe can be seen.

Pulpwood exports are, as seen from Table 9, completely dominated by Finland, with Yugoslavia and Sweden coming a poor second and third. The Korea crisis is very clearly reflected by the Finnish figures: in 1951 exports hit a still unbeaten record of 3.5 million m³. The average for 1950—54 was 2.3, and for the latter part of

Table 9. Exports from different countries of pulpwood 1950—59 in 1 000 m³.

Taulukko 9. Paperipuun vienti eräistä maista vv. 1950—59, 1 000 m³.

Year *Vuosi*	Finland		Sweden	Nor-way	Yugo-slavia	Czechoslo-vakia	Poland	France	Europe		USSR	
	E	W	W	W	W	W	W	W	E	W	E	W
1950	1 882	1 882	255	197	446	19	102	22	2 877	3 065	44	44
1951	3 185	3 478	169	264	396	21	155	17	4 225	4 543	1	1
1952	2 268	2 631	183	254	397	99	149	3	3 225	3 588	7	7
1953	1 045	1 431	207	236	280	166	87	5	2 310	2 697	—	—
1954	1 803	2 146	581	252	501	222	151	3	3 766	4 110	1	2
1955	2 771	3 084	1 051	226	700	126	534	6	5 432	5 745	451	547
1956	2 106	2 457	747	271	881	132	440	137	4 860	5 224	361	528
1957	1 937	2 308	891	289	775	213	287	136	4 799	5 183	296	591
1958	1 924	2 222	646	249	474	108	131	116	3 769	4 068	448	823
1959	2 260	2 445	324	98	486	303	248	367	4 320	4 508	995	1 181
Average *Keskiarvo*	2 408		505	234	534	141	228	81		4 273		372
Average to Europe *Keskimäärin Eurooppaan*	2 118		503	234	533	141	228	80		3 958		260

the decade 2.5 million m³. In Sweden, exports seem to have reached a peak in the middle of the decade and to have decreased towards the end. The Yugoslav export shows much higher figures during the latter part of 1950. No other trends can be found in the figures of the three largest exporters in this field. All the main European countries have exported pulpwood, with the exception of Italy. Among the second-line exporters in W. Europe, Norway leads with fairly even figures during the whole of the 1950's. French exports, which began rather small, increased along with the easing of controls in the timber trade. Even typical importing countries, such as W. Germany and Belgium, are to be found in the statistics with annual yearly exports of 47 000 and 10 000 m³. Poland leads the East bloc, but Czechoslovakia, too, has an average export of 140 000 m³ yearly. Imports from Canada varied between 93 000 and 756 000 m³, with an average of 561 000 m³ yearly. This is quite a large addition to Europe's imports, but forms but a trivial part of Canadian pulpwood exports, which during the 1950's amounted to some 5 million m³ yearly. In Soviet exports, the same tendency can be seen as for this country's exports of coniferous logs: a considerable upswing during the latter half of the decade. Total European exports of this raw-wood material average 4.3 million m³ and it thus forms the largest category of raw wood. It is not possible to note any fall or rise in the part that has been shipped to countries outside Europe.

Pitprop exports average nearly 3 million m³, as shown by the following figures:

Table 10. Exports from different countries of pitprops 1950—59 in 1 000 m³.
Taulukko 10. Kaivospuun vienti eräistä maista vv. 1950—59, 1 000 m³.

Year *Vuosi*	Finland	Sweden	Norway	Austria	Portugal	France		W. Germany	Belgium	Europe		USSR	
	W	W	W	W	W	E	W	W	W	E	W	E	W
1950	880	242	50	95	72	147	185	361	27	2 226	2 278	213	213
1951	1 122	317	65	66	167	288	349	122	54	2 148	2 332	276	276
1952	1 653	1 000	145	308	245	15	98	60	89	4 054	4 333	301	364
1953	588	552	114	156	163	54	111	44	61	2 425	2 630	357	435
1954	966	330	68	210	132	193	248	53	33	2 113	2 437	586	775
1955	1 457	436	76	137	170	195	292	64	74	2 705	3 003	733	839
1956	1 509	269	51	242	168	243	383	88	91	2 671	3 030	456	641
1957	1 410	457	41	179	215	149	290	121	83	2 846	3 126	471	817
1958	1 073	288	56	197	163	90	240	156	44	2 381	2 589	570	991
1959	984	208	34	171	101	150	261	36	37	1 750	1 937	881	885
Average *Keskiarvo*	1 164	410	70	176	160		246	111	59		2 770		624
Average to Europe *Keskimäärin Eurooppaan*	1 060	387	70	175	154		152	111	59		2 532		484

Pitprop exports resemble those of pulpwood in that the number of exporting countries in Europe is large. Finland dominated the market completely during the 1950's, cornering almost half of this trade. She exported 5.2 million m³ in 1950—54 and 6.4 million m³ between 1955 and 1959. Only during the last two years can any fall-off be noted. Sweden comes next, despite her exports having fallen from the 1952 record of 1 million m³ to approximately 200 000 m³ in 1959. In general, both Finnish and Swedish exports show great fluctuations. The table shows Austria with an export of 175 000 m³ of pitprops. This is thus the only kind of raw wood for which the restrictions have been lenient.

Of the importing countries, France and, surprisingly enough, Portugal, are found to be exporting fairly extensively. Even the Netherlands were regularly exporting on a small scale during the latter half of the decade. Of the East bloc countries, E. German exports average some 100 000 m³, and those of Czechoslovakia and Rumania approximately 20 000 and 6 000 m³ annually. Yugoslavia began the decade with fairly extensive exports, but has now completely dropped out of the competition in this field.

Exports from the Soviet Union show a steady rise throughout the period, and now touch the 1 million mark. In other words, Finland's monopoly as an exporter of pitprops has ended. Canada's share varies from 62 000 to 1 million m³, but seems to hover at about the 200 000 m³ mark. It is interesting to note that the

Canadian pitprop export goes almost entirely to Europe. Exports from European to non-European countries display a gradual increase.

Surprisingly enough, the total export figures do not show any clear decreasing tendency. This could have been expected in view of the decrease in consumption which was noted in connection with the market survey. In other words, it looks either as if the importing countries have reduced their own production or as if pitprops are being used for purposes other than mining.

The export of sleepers shows the following distribution:

Table 11. Exports from different countries of sleepers in 1 000 m³.
Taulukko 11. Ratapölkkyjen vienti eräistä maista vv. 1950—59, 1 000 m³.

Year *Vuosi*	Finland	Sweden	Norway	France		W. Germany	Rumania	Yugoslavia	Europe		USSR	
	W	W	W	E	W	W	W	W	E	W	E	W
1950	39	42	—	170	191	6	—	68	332	357	—	—
1951	105	29	—	222	239	2	—	60	419	451	20	20
1952	65	42	—	111	135	1	—	77	347	384	5	5
1953	23	46	—	211	234	7	2	57	385	424	—	—
1954	3	24	2	184	208	14	71	5	296	332	—	88
1955	14	28	4	472	494	22	81	—	640	667	—	41
1956	41	62	5	352	376	5	50	9	530	568	40	113
1957	51	45	2	218	283	5	75	29	467	537	31	224
1958	63	31	2	202	242	3	106	29	499	548	18	93
1959	11	15	2	192	219	16	76	36	400	439	58	78
Average *Keskiarvo*	42	36	2		262	8	46	37		471		66
Average to Europe *Keskimäärin Eurooppaan*	39	36	2		233	8		34		432		17

France's predominance in the export of sleepers is rather curious in view of the fact that she imports such large quantities of timber. Finnish exports show considerable fluctuation from one year to another, the average being 41 500 m³. Of the normal export countries, Norway and Austria have only sporadically participated in the sleeper trade. Norway's exports have never exceeded 5 000 m³, and Austria attained a record with 18 000 m³ in 1952. Yugoslav exports also keep within rather narrow limits. In the East bloc, Rumania displays slightly higher figures during the latter part of the 1950's, the peak being reached with 106 000 m³ in 1958. The Soviet contribution is a small one, nor are Canadian exports of any importance. All in all, the total export of sleepers is insignificant when

compared to varieties of raw wood noted earlier. The yearly average is approximately 470 000 m³. No decreasing tendency can be noted, however.

There remains the difficult task of surveying the export of poles, piling, and posts. The export quantities of these are relatively small and they are difficult to separate statistically, so they are combined in a single table:

Table 12. Exports from different countries of poles, piling and posts 1950—59 in 1 000 m³.
Taulukko 12. Pylväiden, junttapaalujen ja tolppien vienti eräistä maista vv. 1950—59, 1 000 m³.

Year *Vuosi*	Finland W	Sweden W	Norway W	Austria W	France W	W. Germany W	Rumania W	Europe W	USSR W
1950	125	79	27	9	13	66	8	323	7
1951	69	41	18	28	13	21	5	349	2
1952	86	77	30	51	14	9	8	455	—
1953	113	100	49	107	14	10	86	541	3
1954	185	84	44	69	17	42	93	611	53
1955	233	87	42	46	19	45	107	676	46
1956	271	62	40	52	47	64	145	820	52
1957	162	53	38	77	30	45	214	794	34
1958	195	48	26	101	30	34	212	869	88
1959	186	126	95	114	27	48	245	930	178
Average *Keskiarvo*	163	76	41	65	22	38	112	637	46

The normal export countries — Finland, Sweden, Norway and Austria — all export these articles. In the East bloc, Rumania has lately been acquiring an increasingly predominant position with a present annual export of over 200 000 m³. Most of the importing countries seem to maintain regular exports of smaller amounts; export figures are even available for the U.K. The Soviet contribution is not yet of any importance, but Canada regularly exports an average of 168 000 m³ annually. How much of this goes to Europe is not mentioned in the FAO statistics published. It is to be presumed that the major part stays on the American continent. The total export volume of this group is slightly bigger than that of sleepers.

The last group of raw wood is fuelwood seen in Table 13 overleaf.

This raw-wood category is of very little importance to the Nordic export countries. Finnish exports have ceased completely during recent years, though Sweden has begun to export small quantities. Not even Austrian exports are of any significance. On the other hand, the fuelwood trade is still of importance to France and Yugoslavia. In particular recent Yugoslav exports even seem to have grown rather than decreased. The Soviet Union exports no fuelwood at

Table 13. Exports from different countries of fuelwood 1950—59 in 1 000 m³.
Taulukko 13. Polttopuun vienti eräistä maista vv. 1950—59, 1 000 m³.

Year *Vuosi*	Finland W	Sweden W	Norway W	Austria W	France W	W. Germany W	Yugoslavia W	Czechoslovakia W	Europe W
1950	40	—	16	52	361	71	337	23	889
1951	37	—	47	11	452	19	150	24	733
1952	50	—	36	55	432	8	162	19	831
1953	72	—	77	39	283	10	360	49	1 154
1954	60	—	73	45	588	16	297	42	1 374
1955	97	12	95	79	741	9	141	71	1 559
1956	1	87	53	233	491	8	241	123	1 726
1957	—	85	97	45	439	10	483	192	1 852
1958	—	5	85	68	347	13	581	154	1 620
1959	—	36	4	54	349	14	425	43	1 183
Average *Keskiarvo*	36	23	58	68	448	18	318	74	1 292

all, and it does not pay for Canada to compete on the European market. The total quantity of fuelwood traded still exceeds 1 million m³ and shows absolutely no sign of diminishing. Thus, for certain South European countries, the fuelwood trade is still of great importance.

On compiling the averages of the different kinds of raw-wood exports for the whole of Europe in a single table, the following is obtained:

Table 14. European raw-wood exports in 1 000 m³. Annual average 1950—59.
Taulukko 14. Euroopan raakapuun vienti keskimäärin vuodessa vv. 1950—59, 1 000 m³.

Conif. logs *Havutukit*	Broadl. logs *Lehtipuutukit*	Pulpwood *Paperipuu*	Pitprops *Kaivospuu*	Sleepers *Ratapölkyt*	Poles Piling Posts *Pylväät Junttapaalut Tolpat*	Fuelwood *Polttopuu*	Total *Yhteensä*
919	629	4 273	2 770	471	637	1 292	10 991

Pulpwood and pitprop exports are the most important, at any rate as far as volume is concerned. The total export of logs exceeds a yearly average of 1.5 million m³, with fuelwood following close behind. Exports of logs are naturally much greater in value than those of fuelwood. Sleepers and poles, piling and posts together represent only $^1/_{10}$ of the total European raw-wood exports, which during the 1950's averaged 11 million m³ yearly. As can be seen from Table 3, European annual fellings totalled 275 million m³, of which 4.0 % came on to

the international market. If only fellings of industrial timber are counted, exports come to 5.6 %.

It cannot be denied that a survey of export values is also of interest. Despite the discrepancies in the data on this question, the following table has been compiled, and will afford at least some comparison between the monetary values of the different kinds of timber:

Table 15. Value of European raw-wood exports 1956—59 in 1 000 dollars.
Taulukko 15. Euroopan raakapuu viennin arvo vv. 1956—59, 1 000 dollaria.

Year *Vuosi*	Conif. logs *Havutukit*	Broadl. logs *Lehtipuutukit*	Pulpwood *Paperipuu*	Pitprops *Kaivospuu*	Sleepers *Ratapölkyt*	Poles Piling Posts *Pylväät Junttapaalut Tolpat*	Fuelwood *Polttopuu*	Total *Yhteensä*
1956	12 430	20 570	73 110	43 410	19 340	20 100	12 410	201 370
1957	14 360	21 420	73 560	48 050	17 580	16 190	13 890	205 050
1958	23 700	19 020	51 930	38 950	16 810	15 740	13 770	179 920
1959	20 017	25 203	50 830	26 889	15 447	19 618	10 814	168 818
Average *Keskiarvo*	17 627	21 553	62 358	39 325	17 294	17 912	12 721	188 790

The value figures show the same tendencies as those of volume. The export value of broadleaved timber is however much greater per unit volume than that of coniferous, which is natural bearing in mind that the former often includes precious woods. As is to be expected, the fuelwood figures represent the lowest value.

The statistics given hitherto indicate that the European raw-wood exports during the 1950's averaged ca. 11 million m³, of which the total yearly value can be estimated at 190 million dollars. Towards the end of the period, the USSR became an exporter of the first degree, aiming at the European markets. In the export figures for different kinds of wood the same countries tend to appear repeatedly. Finland, Sweden and Norway form a powerful export area of their own. These countries crop up in almost every table. Important second-line countries are Yugoslavia and Rumania. France also appears in a surprising number of tables, bearing in mind that this country is generally regarded as an importer rather than an exporter of wood. Other countries such as Poland and Czechoslovakia appear sporadically as large-scale exporters. Austria, a great exporter of wood-processing industry products, only took part in raw-wood exports on a small scale during the 1950's.

From the above, a fairly clear picture has been obtained of which European countries predominate in the export of raw wood. The next step is to see where the exports go. Starting once again with coniferous logs, the following import statistics are available for the most important European countries:

Table 16. Imports by different countries of coniferous logs 1950—59 in 1 000 m³.
Taulukko 16. Havutukkien tuonti eräisiin Euroopan maihin vv. 1950—59, 1 000 m³.

Year *Vuosi*	W. Germany		United Kingdom		Sweden	Italy	Netherlands		Belgium	Switzerland	Europe	
	E	W	E	W	W	W	E	W	W	W	E	W
1950	26	27	150	150	458	187	164	175	61	102	1 312	1 335
1951	13	16	86	147	456	130	164	172	57	69	1 079	1 174
1952	22	86	126	138	358	127	66	74	18	19	857	958
1953	64	119	50	53	252	238	79	95	50	53	867	945
1954	226	244	32	42	331	236	69	73	40	86	1 093	1 144
1955	487	529	26	27	204	289	74	86	43	77	1 286	1 401
1956	480	525	41	56	182	220	44	67	48	51	1 143	1 277
1957	576	620	33	68	131	179	22	72	58	57	1 191	1 404
1958	403	451	27	47	331	381	34	94	69	46	1 537	1 773
1959	500	557	51	106	167	415	38	108	35	75	2 000	2 258
Average *Keskiarvo*		317		83	287	240		102	48	64		1 367
Average from Europe *Keskimäärin Euroopasta*		280		62	287	183		75	36	63		1 237

As can be seen, the largest imports are those of W. Germany, but Sweden and Italy also attain figures of considerable note. Sweden's imports come mainly from Finland, across the northern frontier. There is also some trade in logs along the Swedish-Norwegian border, which is why Norway is to be found in the statistics. Finnish imports across the Russian border, however, are not to be seen separately in the FAO figures. The next country in importance is the Netherlands, whose imports have been around the 100 000 m³ mark. Belgium and Switzerland appear as regular buyers of this material. In spite of her large total import of timber, the U.K.'s imports of coniferous logs have lately fallen off considerably, while those of Austria have been insignificant. Amongst the Eastern countries, E. Germany has increased her imports quite considerably during the last three years, and Hungary has imported 60 000 m³ of coniferous logs annually since 1954.

Total imports display a rising trend. The average during the first half of the decade was 1.1 million m³, and during the latter half 1.6 million m³.

Most of the importing countries have kept their business inside Europe, but towards the end of the 1950's, Russian offers were having an increasing effect of the figures of some countries — especially Italy, the Netherlands, the U.K. and Belgium. Despite the role of Canada in the U.K. import statistics, Europe has only received small amounts from the rest of the world. The conclusion is, therefore, that the coniferous log trade is an internal European affair.

Imports of broadleaved logs during the past decade are as follows:

Table 17. Imports by different countries of broadleaved logs 1950—59 in 1 000 m³.

Taulukko 17. Lehtipuutukkien tuonti eräisiin Euroopan maihin vv. 1950—59, 1 000 m³.

Year *Vuosi*	W. Germany E	W. Germany W	United Kingdom E	United Kingdom W	France E	France W	Italy E	Italy W	Netherlands E	Netherlands W	Belgium E	Belgium W	Switzerland E	Switzerland W	Denmark E	Denmark W	Europe E	Europe W
1950	22	163	19	439	17	208	123	141	105	172	55	97	52	80	31	33	448	1 382
1951	37	220	22	600	7	292	13	41	122	212	73	136	72	113	31	37	404	1 797
1952	30	273	15	346	2	219	13	40	68	133	44	69	51	74	23	31	272	1 368
1953	38	402	16	542	1	177	15	71	89	180	89	112	69	95	25	30	361	1 743
1954	69	614	90	327	1	318	37	108	98	210	138	177	167	174	31	43	526	2 074
1955	183	865	18	436	2	406	46	190	101	227	188	247	108	161	27	51	722	2 776
1956	152	871	16	332	2	383	52	214	83	221	179	251	116	155	22	48	674	2 689
1957	156	939	12	382	1	460	139	305	76	216	173	255	97	147	42	69	788	3 009
1958	137	937	10	379	2	635	85	378	59	206	135	215	79	121	76	108	672	3 238
1959	150	1 107	11	402	1	652	123	531	92	276	205	342	88	137	50	103	700	3 805
Average *Keskiarvo*		639		419		375		202		205		190		126		55		2 388
Average from Europe *Keskimäärin Euroopasta*		97		23		4		65		89		128		90		36		557

In the import of broadleaved timber, W. Germany dominates, with the U.K. in second place. These two countries together account for about half of the total import. France, Holland, Belgium, Italy and Switzerland also import large quantities annually, as seen from the figures above. On the other hand, East-bloc imports of this material have been small. To give some idea of the trade of the Eastern countries, Czechoslovakia leads with an average import of 27 000 m³.

The Northern export countries all have broadleaved timber resources of their own. Import figures for this kind of raw wood reflect mostly a need for species that do not grow in the countries concerned, as the following figures indicate:

Annual average 1950—59 in m³.

Finland	3 800
Sweden	38 500
Norway	6 000

Of the Swedish imports, however 18 000 m³ annually have been purchased inside Europe, mostly from Finland.

The table shows an increase in imports from the whole world. This has affected all countries except the U.K., which shows a gradual decrease. The trend is much

Table 18. Imports by different countries of pulpwood 1950—59 in 1 000 m³.

Taulukko 18. Paperipuun tuonti eräisiin Euroopan maihin vv. 1950—59, 1 000 m³.

Year *Vuosi*	W. Germany E	W. Germany W	United Kingdom E	United Kingdom W	France E	France W	Italy E	Italy W	Belgium E	Belgium W	Netherlands E	Netherlands W	Switzerland E	Switzerland W	Sweden W	Norway W	Europe E	Europe W
1950	638	638	160	238	157	161	355	355	219	219	251	251	34	34	490	217	2 619	2 699
1951	1 147	1 253	57	313	287	523	410	434	184	184	439	439	340	407	745	648	4 410	5 164
1952	1 068	1 186	81	464	368	571	420	658	144	144	274	274	309	354	782	399	4 054	5 040
1953	743	822	22	291	216	262	447	447	57	57	197	197	56	56	275	129	2 269	2 668
1954	1 351	1 457	90	363	305	347	783	822	114	120	303	320	167	174	273	562	4 103	4 591
1955	2 106	2 285	69	364	409	657	697	740	175	202	260	326	353	572	280	819	5 906	6 999
1956	2 063	2 227	98	352	593	885	894	961	191	238	190	294	247	333	348	559	5 754	6 825
1957	1 654	1 758	100	376	612	840	879	965	253	353	255	362	282	282	299	106	5 204	6 118
1958	1 428	1 581	26	239	554	704	635	875	134	228	146	184	282	282	269	198	4 710	5 606
1959	1 580	1 744	142	307	666	770	750	935	255	339	152	199	97	97	201	324	4 700	5 665
Average *Keskiarvo*		1 495		331		572		719		210		285		259	397	396		5 138
Average from Europe *Keskimäärin Euroopasta*		1 378		85		417		627		173		247		217	396	385		4 373

less clear in respect of the trade within Europe. None the less, the European share, too, has increased from an average of 0.4 million m³ during the first half of the 1950's to 0.7 million m³ during the latter half. Purchases of broadleaved timber from European countries represent only 1/4 of the total imports. In particular France, the U.K. and W. Germany are completely dependent on non-European sources. These sources will be considered later in another connection.

Table 18 on the previous page gives an analysis of pulpwood imports:

W. Germany is at present importing twice as much pulpwood as any other country. Italian and French imports are also on a large scale, those of the U.K. slightly smaller. Among the exporting countries, both Sweden and Norway have imported large quantities annually, an average per year of 400 000 m³. This trade is thus rather remarkable, that the main import comes from these two countries and as such has a transport-economical background. In recent years a certain fall in this trade has been apparent. Finland is one of the few countries in Europe that, in general, import no pulpwood. In the FAO statistics we still find an import of 28 000 m³ from the USSR in 1955. Austria has an average import of 87 000 m³, which seems a surprisingly small amount considering the growth of its paper industry. The restrictions on timber trade in this country also applied to imports, of which more will be said in a later chapter. Among the East European countries, E. Germany, Hungary and Poland have been import-

Table 19. Imports by different countries of pitprops 1950—59 in 1 000 m³.

Taulukko 19. Kaivospuun tuonti eräisiin Euroopan maihin vv. 1950—59, 1 000 m³.

Year *Vuosi*	United Kingdom		W. Germany		France	Belgium		Netherlands	Hungary	Italy	Europe	
	E	W	E	W	W	E	W	W	W	W	E	W
1950	1 525	1 560	106	112	300	199	199	61	1	7	2 239	2 280
1951	1 358	1 795	58	58	140	287	372	105	32	10	1 985	2 522
1952	1 833	3 056	900	900	354	217	378	205	383	5	3 884	5 309
1953	1 060	1 670	363	374	167	46	46	59	487	28	2 314	2 978
1954	796	1 486	691	854	52	64	64	5	559	29	2 240	3 094
1955	564	1 286	1 333	1 593	74	293	375	43	561	22	2 897	3 969
1956	900	1 379	954	1 099	85	249	276	94	587	20	2 930	3 599
1957	980	1 515	929	1 058	114	223	232	83	583	21	3 010	3 686
1958	679	1 000	984	1 237	158	109	109	26	606	22	2 610	3 299
1959	727	857	600	769	26	57	70	34	592	19	2 000	2 541
Average *Keskiarvo*		1 560		805	147		212	72	439	18		3 328
Average from Europe *Keskimäärin Euroopasta*		1 042		692	147		174	61	439	16		2 611

ing noteworthy quantities since the middle of the 1950's. E. German imports came to as much as 672 000 m³ in 1958, while Hungary and Poland imported a little over 100 000 m³ each.

It is hard to find any overall trends, as the import figures fluctuate considerably every year. For instance, Europe imported a mere 2.7 million m³ from the whole world in 1953, but 7.0 million in 1955, the latter being a record for the 1950's. Nevertheless, an evident increase of the trade volume can be noted, rising from 4.0 million m³ in 1950—54 to 6.3 million in 1955—59. The non-European share during the latter half of the decade was some 1 million m³.

The U.K. still leads pitprop imports with an average of over 1.5 million m³. W. Germany comes second with 0.8 million m³. These two countries account for almost 70 % of the entire import; of the other W. European countries only Belgium and France show import figures of any significance. Hungary holds a special position among the Eastern countries: since 1952 she has been importing large quantities — often over 1/2 million m³ annually. During the three last years, Poland has also shown interest in importing this material, while Czechoslovakia and E. Germany have had no dealings in it at all. Imports of pitprops during the first and second half of the decade totalled 16.2 million m³ and 17.1 million m³ respectively. Thus there was no overall reduction, but when U.K. imports are analysed in the same way, however, a decrease of over 3 million m³ is observed between the first and second five-year periods. A corresponding

Table 20. Imports by different countries of sleepers 1950—59 in 1 000 m³.

Taulukko 20. Ratapölkkyjen tuonti eräisiin Euroopan maihin vv. 1950—59, 1 000 m³.

Year *Vuosi*	W. Germany		United Kingdom		Netherlands		Belgium		Denmark	France	Switzerland	Europe	
	E	W	E	W	E	W	E	W	W	W	W	E	W
1950	14	14	198	260	13	15	39	95	20	9	2	366	517
1951	43	43	117	364	15	38	42	50	12	5	5	397	684
1952	84	84	54	316	15	33	38	105	14	6	11	346	763
1953	65	68	153	343	51	75	12	16	10	19	9	339	595
1954	19	19	103	193	34	52	11	11	9	30	10	240	385
1955	207	273	141	264	31	33	16	16	5	28	10	564	803
1956	163	210	176	443	69	90	29	48	5	20	14	584	1 027
1957	106	110	161	350	30	49	15	17	10	25	24	550	839
1958	80	86	147	310	24	28	13	13	12	24	12	482	748
1959	80	84	75	169	40	42	17	17	10	16	9	300	478
Average *Keskiarvo*		99		301		46		39	11	18	11		684
Average from Europe *Keskimäärin Euroopasta*		86		133		32		23	11	—	9		417

increase is noted for W. Germany, though, so the total trade has remained nearly unchanged.

The traditional export countries are only occasionally to be found as importers of pitprops, and then only in small quantities. This is quite natural, as the mining industry is comparatively unimportant in these countries, and their forest resources are rich. Statistics on the pitprop trade tend to be uncertain, as pitprops can also be used as pulpwood. In some years this question is simply linked up with prices, as was noted in the market survey.

The table 20 on page 39 shows imports of sleepers distributed according to countries.

The number of countries involved in this trade is large. All the same, the U.K. and W. Germany take about 80 % of the total quantity. During recent years, Spain, E. Germany and Hungary have been importing larger quantities than earlier.

Of the export countries, Sweden and Austria have occasionally imported sleepers, but Finland and Norway are not to be seen in the statistics at all. The total import figures show that imports grew by almost 1 million m³ during the latter part of the 1950's. The sharpest increase was noted in W. Germany between 1955 and 1957. On the other hand, British imports have been fairly constant for several years. About 40 % of the total import comes from countries outside Europe.

Imports of poles, piling and posts appear as follows:

Table 21. Imports by different countries of poles, piling and posts 1950—59 in 1 000 m³.
Taulukko 21. Pylväiden, junttapaalujen ja tolppien tuonti eräisiin Euroopan maihin 1950—59, 1 000 m³.

Year *Vuosi*	W. Germany	United Kingdom	Netherlands	Italy	Hungary	France	Ireland	Europe
1950	26	107	103	41	84	16	—	308
1951	9	43	71	36	64	10	—	186
1952	27	55	59	37	77	9	40	316
1953	36	96	120	60	95	16	21	494
1954	64	92	133	57	83	4	33	493
1955	64	96	132	103	136	5	33	623
1956	16	114	159	102	179	27	42	661
1957	13	98	142	61	233	20	11	621
1958	12	67	165	67	229	19	1	530
1959	23	77	141	205	263	17	11	730
Average *Keskiarvo*	29	85	123	77	144	14	19	496

Here, too, imports are fairly evenly divided between a large number of countries. The Netherlands' imports for the whole 10 year period exceeded those

of any other country because of their need for poles for harbour works and canal digging. Lately though, the Hungarian imports have grown considerably and are now the largest. As to be expected, Finland and Austria have not imported any of these articles. Swedish and Norwegian imports average 3 200 m³ and 10 700 m³ resepectively. Norway's imports, for some unknown reason, sharply increased during the last two years.

The total trade shows a clear increase. European countries imported almost twice as many poles, piling and posts between 1955 and 1959 as they did during the years 1950—54. The total volume is still rather small though, the average for the whole decade being under $^1/_2$ million m³.

The import of fuelwood is distributed between the following countries.

Table 22. Imports by different countries of fuelwood 1950—59 in 1 000 m³.
Taulukko 22. Polttopuun tuonti eräisiin Euroopan maihin 1950—59, 1 000 m³.

Year *Vuosi*	W. Germany	Hungary	Italy	Switzerland	Belgium	Netherlands	Sweden	Europe
1950	10	815	429	237	37	5	9	732
1951	23	151	328	278	44	6	21	712
1952	142	225	308	260	22	5	22	993
1953	44	403	485	188	31	15	3	1 174
1954	75	450	443	133	32	6	7	1 150
1955	141	429	290	147	24	5	4	1 043
1956	233	545	278	143	20	9	25	1 067
1957	223	689	274	183	32	12	29	1 500
1958	240	586	366	109	30	14	22	1 390
1959	171	467	522	94	30	15	50	1 202
Average *Keskiarvo*	130	476	372	177	30	9	19	1 096

For Hungary and Italy, fuelwood is obviously a very important article. Swiss and W. German imports follow, those of the other countries being rather insignificant. France and the U.K. hardly import any fuelwood at all. It is surprising to find that Sweden imported a certain quantity regularly during the whole of the 1950's. Finland only has import figures for the years 1955 and 1959, while Norway and Austria started to import small quantities towards the end of the decade. Italian and Swiss imports seem to be dropping off, but the total trend in Europe is clearly an increasing one. The average for the whole decade exceeds 1 million m³, but it seems rather probable that part of the fuelwood imports were used for pulp production.

W. Germany is the only country to be found in all the tables for imports. This country now dominates the log and pulpwood import markets, while the U.K. still leads in pitprops, sleepers, and poles, piling and posts. Other importing

countries of significance are France, Italy, the Netherlands and Belgium. Among the E. European countries, Hungary is the most important.

To summarize, the following table contains the total yearly export and import volumes for all groups of raw wood.

Table 23. Foreign trade in raw wood in different countries, in 1 000 m³. Annual average 1950—59.

Taulukko 23. Raakapuun ulkomaankauppa eri maissa keskimäärin vuodessa vv. 1950—59, 1 000 m³.

	Export *Vienti*	Import *Tuonti*	Balance *Erotus*
Finland	4 222	14	+ 4 208
France	1 177	1 156	+ 21
Sweden	1 153	756	+ 397
Yugoslavia	923	10	+ 913
Norway	489	523	— 34
Austria	338	117	+ 221
Belgium	315	730	— 415
W. Germany	274	3 515	— 3 241
Portugal	180	34	+ 146
Switzerland	39	636	— 597
Denmark	38	75	— 37
United Kingdom	9	2 779	— 2 770
Netherlands	8	840	— 832
Italy	6	1 629	— 1 623
Total — *Yhteensä*	9 171	12 814	— 3 643

From this table, it is obvious that Finland and Yugoslavia were the only countries with large positive balances in their raw wood trade during the 1950's. Finnish exports are in a class on their own. Excluding Yugoslavia, the total exports of all W. European countries fall below the quantities that Finland alone exports. Sweden, Austria and Portugal also show positive balances, but much smaller. The Swedish export surplus is astonishingly low. France has a large raw-wood trade in which exports and imports almost completely equalize each other. All other countries show a negative balance. It is remarkable to find that Norway imported more raw wood than she exported during the 1950's. The greatest negative balances were those of W. Germany, the U.K. and Italy in that order. Of the predominantly import countries, only Belgium and W. Germany carry on exports of any significance.

It is interesting to observe which kinds of raw wood underwent the biggest and smallest changes in annual trade volume. For this purpose annual deviations from the 10-year average have been taken separately for each raw-wood category. The average annual deviation has then been compared with the 10-year average and the resulting percentages are given in the following table:

Table 24. Average deviations of annual raw-wood trade volume as percentages of average volumes for 1950—59.

Taulukko 24. Raakapuun ulkomaankaupan volyymin keskimääräinen vuosittainen poikkeama prosentteina vv. 1950—59 keskiarvoista.

	Export *Vienti*	Import *Tuonti*
Coniferous logs – *Havutukit*	21.8	20.0
Broadleaved logs – *Lehtipuutukit*	12.1	30.0
Pulpwood – *Paperipuu*	18.0	21.2
Pitprops – *Kaivospuu*	17.4	19.6
Sleepers – *Ratapölkyt*	18.5	22.2
Pools, piling, posts – *Pylväät, junttapaalut, tolpat*	28.4	27.6
Fuelwood – *Polttopuu*	25.9	17.1
Total — *Yhteensä*	142.1	157.7

On the export side, the smallest deviations are noted in the export of broadleaved logs. Deviations in pulpwood, pitprop and sleeper volumes are also less than 20 %. The greatest annual fluctuations have obviously been in poles, piling and posts.

Fluctuations in imports follow somewhat different trends. Only fuelwood and sleepers show average deviations of under 20 % and the greatest fluctuation is to be found in broadleaved logs. This is however partly due to the steady increase in trade volume which was noted during the whole of the 1950's. This will of course influence the yearly deviations from the average.

If we examine the deviations for some important export countries the table overleaf is obtained:

On the basis of these figures, it appears that as a rule the deviations shown in the Swedish export figures should have been the most marked. It can be thought that this circumstance bears some relation to the export regulations which were enforced in other countries. This point is reverted to later.

Table 25. Average deviations of annual raw-wood export volume in 1 000 m³ and as percentages of average volumes for 1950—59.

Taulukko 25. Raakapuun viennin volyymin keskimääräinen vuosittainen poikkeama 1 000 m³:ssä ja prosentteina vv. 1950—59 keskiarvoista.

Coniferous logs — *Havutukit*

Year *Vuosi*	Finland 1 000 m³	%	Sweden 1 000 m³	%	France 1 000 m³	%
1950	+ 170	48	— 59	65	+ 44	24
1951	+ 314	89	— 61	66	— 39	21
1952	+ 347	98	— 43	46	— 99	53
1953	— 80	22	— 30	33	— 33	18
1954	— 8	2	+ 17	18	+ 37	19
1955	— 119	34	+ 11	12	+ 109	59
1956	— 215	61	— 6	7	— 24	12
1957	— 202	57	+ 15	16	— 21	11
1958	— 14	4	+ 55	60	— 23	12
1959	— 196	56	+ 98	107	+ 52	28
Average — *Keskiarvo*		47		43		26

Pulpwood — *Paperipuu*

Year *Vuosi*	Finland 1 000 m³	%	Sweden 1 000 m³	%	Yugoslavia 1 000 m³	%	Norway 1 000 m³	%
1950	— 526	22	— 250	49	— 88	16	— 37	15
1951	+ 1 070	44	— 336	66	— 138	25	+ 30	12
1952	+ 223	9	— 322	63	— 137	25	+ 20	8
1953	— 977	41	— 298	59	— 254	47	+ 2	1
1954	— 262	11	+ 76	15	— 33	6	+ 18	7
1955	+ 676	28	+ 546	108	+ 166	31	— 8	3
1956	+ 49	2	+ 242	47	+ 347	64	+ 37	15
1957	— 100	4	+ 386	76	+ 241	45	+ 55	23
1958	— 186	17	+ 141	27	— 60	11	+ 15	6
1959	+ 37	2	— 181	35	— 48	9	— 136	58
Average — *Keskiarvo*		18		55		28		15

Pitprops — *Kaivospuu*

Year *Vuosi*	Finland 1 000 m³	%	Sweden 1 000 m³	%	France 1 000 m³	%	Austria 1 000 m³	%
1950	— 284	24	— 168	41	— 61	25	— 81	46
1951	— 42	4	— 93	23	+ 103	42	— 110	63
1952	+ 489	42	+ 590	144	— 148	60	+ 132	75
1953	— 576	49	+ 142	34	— 135	55	— 20	11
1954	— 198	17	— 80	20	+ 2	1	+ 34	19
1955	+ 293	25	+ 26	6	+ 46	19	— 39	22
1956	+ 345	29	— 141	34	+ 137	56	+ 66	38
1957	+ 246	21	+ 47	11	+ 44	18	+ 3	2
1958	— 91	8	— 122	30	— 6	2	+ 21	12
1959	— 180	15	— 202	49	+ 15	6	— 5	3
Average — *Keskiarvo*		23		39		28		29

If an attempt is made to compare the deviations in the volume of trade with the corresponding statistics for the production of sawn goods or pulp, no particular correlation can be observed in either importing or exporting countries. Neither does the trade seem to stand in any direct relation to the fellings in the respective countries. The causal connection between international trade volume and the internal circumstances of production of the countries is clearly more complicated than what appears from these direct comparisons. The stock position in the importing countries is obviously of significance, but it should be possible to leave it out of account over a lengthy period.

One could expect it at least to be possible to indicate a correlation between price movements and volume of trade in the respective types of raw wood. This again does not seem to be the case, as is shown by the following figures from some of the most important countries (cf. also Table 54 p. 107):

Pulpwood

	Finland		Sweden	
Year	Exports 1 000 m³	Prices 1 000 Fmk/stere	Exports 1 000 m³	Imports 1 000 m³	Prices Kr/m³
1950	+ 1 882	+ 1.5	— 225	+ 490	+ 39
1951	— 3 478	+ 2.3	— 169	+ 745	+ 69
1952	— 2 631	— 4.2	+ 183	— 782	— 102
1953	+ 1 431	— 2.9	+ 207	+ 275	— 62
1954	+ 2 146	+ 2.6	+ 581	— 293	+ 70
1955	— 3 084	+ 2.8	— 1 051	+ 280	+ 77
1956	— 2 457	+ 2.8	— 747	+ 348	+ 78
1957	— 2 308	+ 3.0	+ 891	— 299	— 72
1958	+ 2 222	+ 3.3	— 646	— 273	— 70
1959	2 445	— 2.9	— 324	— 201	— 63

Pitprops

	Finland		United Kingdom	
Year	Exports 1 000 m³	Prices 1 000 Fmk/fathom	Imports 1 000 m³	Prices £/fathom
1950	+ 880	+ 9.0	+ 1 560	+ 20.12
1951	+ 1 122	+ 14.0	+ 1 795	+ 35.60
1952	— 1 653	— 24.8	— 3 056	— 43.19
1953	+ 588	— 13.8	— 1 670	— 30.12
1954	+ 966	+ 12.9	— 1 486	+ 26.55
1955	+ 1 457	— 14.5	+ 1 286	+ 32.17
1956	— 1 509	+ 14.4	+ 1 379	— 34.28
1957	— 1 410	+ 16.2	— 1 515	— 33.69
1958	— 1 073	— 19.6	— 1 000	— 30.16
1959	984	16.9	857	27.06

Even on analysing a much more extensive material, no complete correlation could be established between raw-wood prices and international trade. Only the Finnish exports of coniferous logs followed the price movements of sawn goods. For Sweden such a correlation can not be established.

24. The directions of trade

To complete this survey of Europe's raw-wood trade during the last 10 years, a further analysis follows of where the exports of the most important countries have been directed. FAO statistics give no distribution per country for exports of poles, piling, and posts or fuelwood. As these raw-wood categories are of minor interest, especially fuelwood from the point of view of Finland, no effort has been made to obtain these data from other sources, and they have been omitted from this geographical analysis.

As already noted in the previous chapter, exports have remained mainly within Europe. The following table shows average Finnish exports during the 1950's distributed between the most important markets:

Table 26. Finnish raw-wood exports by country of delivery in 1 000 m³.

Taulukko 26. Suomen raakapuun vienti tuojamaittain keskimäärin vuodessa vv. 1950—59, 1 000 m³.

	Coniferous logs *Havutukit*	Broadeaved logs *Lehtipuutukit*	Pulpwood *Paperipuu*	Pitprops *Kaivospuu*	Sleepers *Ratapölkyt*	Total *Yhteensä*
Austria	—	—	6.3	—	—	6.3
Belgium	3.2	—	147.7	86.0	—	236.9
Czechoslovakia	—	—	1.4	—	—	1.4
Denmark	2.4	8.0	—	—	—	10.4
France	0.3	—	435.2	30.6	—	466.1
W. Germany	8.5	12.2	435.5	285.6	4.8	746.6
Greece	1.2	—	—	—	—	1.2
Hungary	—	0.3	51.5	64.5	5.8	122.1
Ireland	1.9	0.3	—	—	—	2.2
Italy	0.9	—	71.3	2.0	—	74.2
Netherlands	18.3	9.4	267.2	6.5	0.5	301.9
Norway	2.5	0.3	242.0	—	—	244.8
Poland	—	—	—	6.9	17.8	24.7
Spain	—	—	—	3.8	—	3.8
Sweden	242.0	12.4	98.7	1.4	—	345.5
Switzerland	—	—	116.4	—	—	116.4
United Kingdom	6.4	4.6	101.6	539.4	2.6	654.6
Other European countries *Muut Euroopan maat*	3.1	2.0	124.1	19.1	8.7	157.0
Europe	290.7	49.5	2 098.9	1 045.8	40.2	3 525.1
USSR	3.1	—	281.8	0.3	0.3	285.5
Egypt	56.4	5.6	—	—	—	62.0
Israel	—	—	—	—	2.0	2.0
Turkey	—	—	27.9	117.0	—	144.9
Other countries *Muut maat*	1.9	0.7	—	1.2	—	3.8
Total — *Yhteensä*	352.1	55.8	2 408.6	1 164.3	42.5	4 023.3

As we stated earlier, the main part of Finland's coniferous log exports has gone to Sweden. 1952 was a record year, with an export of 638 000 m³. Since then a considerable decrease has taken place: The export figures for 1950—54 and 1955—59 total 1 756 000 m³ and 710 000 m³ respectively.

Next comes Egypt, to whom Finland exported 56 000 m³ annually during the ten years. Here, too, exports have been falling off since 1951, when a record export of 155 000 m³ was attained. During the years 1958—59, in fact, the log trade with this country was completely stagnant.

The Netherlands came third with a yearly average import from Finland of 18 000 m³. Other countries took smaller amounts. Norway imported quantities of approximately 2 500 m³ yearly. W. Germany regularly bought smaller quantities, while the U.K. market has been completely stagnant for some years. Finland exported a total of 30 000 m³ to the Soviet Union in 1951—54, but in other years, practically no trade was done.

In the export of broadleaved logs, W. Germany and Sweden compete for first place. Smaller amounts have rather regularly been sold to the Netherlands, Denmark and Egypt. Finland competed on the British market in 1950—53, but has since withdrawn. The broadleaved logs exported have mostly been birch.

The Finnish pulpwood exports cover the whole of Europe. Here we can note an export ratio of $^2/_3$ spruce and $^1/_3$ pine. The table shows W. Germany and France as the most important countries during the 1950's. The total imports of these two countries for the ten year period are surprisingly similar: 4 356 000 m³ for W. Germany and 4 355 000 m³ for France. On the other hand, the situation has changed in that France, the smaller market in the early 1950's, has now clearly overtaken W. Germany; exports in 1959 were 646 000 m³ and 321 000 m³ respectively. The next market in importance was the Soviet Union with an average import of 282 000 m³ annually. The Netherlands market was of the same size, and exports to Belgium were approximately 148 000 m³. Fairly large quantities were exported to both Norway and Sweden. Exports to Norway rose to 587 000 m³ in 1951 but the average was 242 000 m³. The export to Sweden has been falling off sharply since 1953, but still shows an average of almost 100 000 m³, because of the big shipments at the beginning of the decade. Exports to Switzerland and England were in roughly the same class, but more evenly divided over the years.

In regard to the East bloc, FAO statistics show that Finland exported small quantities to Hungary, but that there has been no trade with Czechoslovakia since 1951. For E. Germany and Poland, figures are available only for the years 1950 and 1951, when the trade was of no importance. On analysing such exports with the help of the Finnish customs statistics, however, an obvious increase can be seen: the export volume in 1959 was 163 000 m³ to E. Germany and 86 000 m³ to Poland. The annual average during the 1950's for these countries showed 82 500 m³ and 28 000 m³ respectively. Naturally enough no pulpwood has been sold to Rumania, Bulgaria or Yugoslavia.

Of the non-European countries, only Turkey has bought pulpwood from Finland apart from USSR. This export seems to be decreasing as no contracts have been made during the past few years.

On the pitprops market, the U.K. took almost half the total export of Finland during these 10 years. There has been a certain fall in yearly quantities since the beginning of the decade, the peak — 841 000 m³ — being reached in 1952. This is partly compensated by the W. German market, which grew from 1 000 m³ in 1950 to 355 000 m³ in 1959. The next was Turkey, with an average import of 117 000 m³. As with pulpwood, trade seems to have been completely at a standstill during the last two years. Belgian purchases continued during the whole decade, while Hungary only started buying in 1953. During a single year (1952), France bought 277 000 m³, but the rest of the time transactions were small or non-existent.

Exports to Finland's neighbours Sweden and Norway, have been insignificant, though Sweden bought a few small quantities at the beginning of the decade. Likewise, exports in this line to USSR have been rather limited, with a peak of 1 500 m³ in 1956. There have been no regular exports to any other E. European countries, though E. Germany bought some 117 000 m³ in all during the years 1954—58.

When we regard the figures for sleepers, the export seems to have been rather difficult of explanation. Poland was the most important market at the beginning of the 1950's, but since 1953 this trade has fallen away to nothing. Taking the average for the whole decade, this country still leads on account of the large contracts made during the period 1950—52. Finland's most regular customer appears to have been Hungary, though the volume purchased was small. Other markets worth mentioning have been W. Germany and the U.K. There has been practically no trade at all with neighbouring Nordic countries. Exports to the Soviet Union were even smaller than on the case of pitprops. Among non-European countries, Israel purchased a few thousand cubic metres nearly every year.

As far as total exports go, W. Germany has been Finland's most important customer, with the U.K. second and France third, due purely to her large import of pulpwood. Sweden comes fourth with her considerable imports of coniferous logs and pulpwood. Only about 10 % of the total exports go to countries outside Europe. The total average export of raw wood from Finland during the 1950's was 4.2 million m³, as was seen from Table 23. For comparison's sake, it may be mentioned that the average for the period 1930—39 was 2.7 million m³.

Swedish raw-wood exports can be seen from the table overleaf.

Coniferous logs have mainly been shipped to W. Germany. From an insignit ficant beginning in 1952 it grew to no less than 166 000 m³ in 1959. The nex-important market has been the Netherlands, with a fairly regular annual import of 27 000 m³ throughout the decade. Norway comes next with 14 000 m³

Table 27. Swedish raw-wood exports by country of delivery in 1 000 m³.
Annual average 1950—59.

Taulukko 27. Ruotsin raakapuun vienti tuojamaittain keskimäärin vuodessa vv. 1950—59 1 000 m³.

	Coniferous logs *Havutukit*	Broadleaved logs *Lehtipuutukit*	Pulpwood *Paperipuu*	Pitprops *Kaivospuu*	Sleepers *Ratapölkyt*	Total *Yhteensä*
Belgium	0.7	0.3	0.6	4.1	—	5.7
Denmark	0.8	6.5	—	—	9.6	16.9
France	—	—	5.9	—	—	5.9
W. Germany	45.3	1.6	254.1	160.4	10.5	471.9
Greece	—	—	—	—	—	—
Hungary	—	—	34.7	7.5	—	42.2
Iceland	0.4	—	—	—	—	0.4
Ireland	0.2	—	—	—	—	0.2
Italy	0.1	—	4.8	—	—	4.9
Netherlands	26.9	—	1.8	6.8	6.9	42.4
Norway	13.9	—	193.0	—	0.4	207.3
Spain	—	—	—	2.8	—	2.8
United Kingdom	1.9	1.9	1.5	196.2	8.3	209.8
Other European countries *Muut Euroopan maat*	0.2	0.4	7.0	8.0	0.2	15.8
Europe	90.4	10.7	503.4	385.8	35.9	1 026.2
Egypt	—	—	—	—	0.1	0.1
Turkey	—	—	2.5	22.9	—	25.4
Israel	—	—	—	—	0.2	0.2
Other countries *Muut maat*	0.1	—	—	1.6	0.5	2.2
Total — *Yhteensä*	90.5	10.7	505.9	410.3	36.7	1 054.1

annually. This export, however, has been diminishing for the last two years. The other markets are of lesser importance. The U.K. and Denmark have bought small quantities annually. There have been no exports to Finland, Austria or the Soviet Union. A small volume has been delivered outside Europe, to Egypt, and a still smaller one to North Africa.

Swedish exports of broadleaved logs have been so small that there is no classification per country of import in the FAO export statistics. It has been possible to complete the table, however, by studying the corresponding import figures. From this it is seen that the main market is Denmark, followed by the U.K. and W. Germany.

Of greater interest are Swedish exports of pulpwood. As seen from the table, they go mainly to W. Germany with Norway taking second place. These two countries regularly bought pulpwood from Sweden throughout the entire 1950's. W. Germany reached a record in 1957 with 636 000 m³. All other countries

have only occasionally purchased pulpwood from Sweden. For example Hungary imported 346 000 m³ during the years 1954—57. On the French market Sweden has only been competing with Finland since 1955, and the quantities exported total 60 000 m³. There seems to have been no trade with the Soviet Union and of the non-European countries, only Turkey seems to have been in the market.

Exports of Swedish pitprops are principally divided between the U.K. and W. Germany. The average for the ten years is still a little higher in the case of the U.K., but on studying the yearly quantities, it is seen that the W. German market has lately become much more important. The 1950—55 figures were 491 000 m³ for W. Germany and 1 633 000 m³ for the U.K. and those of the latter half of the decade 1 150 000 m³ and 329 000 m³ respectively. As in the case of pulpwood, there have been occasional exports from Sweden to one country or another. Fairly regular exports have gone to Turkey, totalling 223 000 m³ for the whole decade.

Swedish sleepers, on the other hand, have found regular buyers in W. Germany, Denmark, the U.K. and the Netherlands, which together have taken almost 100 % of the export. Very small quantities have been sold annually to Norway and Egypt. Israel and Turkey are also to be found in the export statistics for the beginning of this period.

Without doubt, the most important country for the totality of Swedish raw-wood exports is W. Germany.

Table 28. Norwegian raw-wood exports by country of delivery in 1 000 m³. Annual average 1950—59.

Taulukko 28. Norjan raakapuun vienti tuojamaittain keskimäärin vuodessa vv. 1950—59, 1000 m.

	Coniferous logs *Havutukit*	Broadleaved logs *Lehtipuutukit*	Pulpwood *Paperipuu*	Pitprops *Kaivospuu*	Sleepers *Ratapölkyt*	Total *Yhteensä*
Belgium	2.5	0.1	1.1	0.2	—	3.9
Denmark	0.1	0.5	—	0.2	—	0.8
W. Germany	2.2	—	0.7	9.6	—	12.5
Hungary	—	—	—	1.7	—	1.7
Sweden	63.1	0.8	242.0	—	—	305.9
Netherlands	2.7	—	—	0.1	—	2.8
Spain	—	—	—	—	—	—
Poland	—	—	—	0.1	—	0.1
France	—	—	0.3	—	—	0.3
Greece	0.9	—	—	—	—	0.9
United Kingdom	29.8	0.5	—	57.1	—	87.4
Other countries *Muut maat*	0.2	—	0.2	0.8	—	1.2
Total — *Yhteensä*	101.5	1.9	244.3	70.0	—	417.6

In compiling the table for Norway, pitprops were the only item to be found in the export figures for this country. Figures for other items have therefore been taken from the FAO import figures of the respective countries.

As can be seen, Norway has two main markets for her coniferous logs — the U.K. and Sweden. Exports to Sweden show a falling trend, but British purchases have been fairly constant for some years. The other regular markets, the Netherlands, W. Germany and Belgium import only small quantities yearly. Norways' exports of broadleaved logs are evidently unimportant.

Pulpwood exports go almost exclusively to Sweden, while 80 % of Norway's pitprops go to the U.K. The W. German market, too, has been of a certain sporadic importance, as can be seen from the average export volume of 9 600 m³. There are no figures for the export of sleepers as this seems to have been on a very small scale.

Owing to her large pulpwood imports, Sweden is in all the most important market, with the U.K. coming second. Between them, these two countries absorb 90 % of Norway's total raw-wood export.

As already stated, Austrian raw-wood exports were very severely restricted during the 1950's. Consequently the present distribution of exports per country may give a somewhat inaccurate picture of the natural direction of Austria's trade. Here, however, are the data in tabular form:

Table 29. Austrian raw-wood exports by country of delivery in 1 000 m³. Annual average 1950—59.

Taulukko 29. Itävallan raakapuun vienti tuojamaittain keskimäärin vuodessa vv. 1950—59, 1 000 m³.

	Coniferous logs *Havutukit*	Pulpwood *Paperipuu*	Pitprops *Kaivospuu*	Total *Yhteensä*
Belgium	—	—	12.8	12.8
France	—	—	7.6	7.6
W. Germany	1.8	0.9	96.8	99.6
Hungary	—	—	39.3	39.3
Italy	10.2	49.9	14.9	75.0
Netherlands	1.6	—	—	1.6
Poland	—	—	2.5	2.5
Switzerland	—	6.4	—	6.4
Turkey	—	—	1.6	1.6
Other countries *Muut maat*	—	3.7	—	3.7
Total — *Yhteensä*	14.0	60.9	175.7	250.1

The small amount of coniferous logs that Austria has permitted to be exported has gone mainly to Italy. The same country dominates the pulpwood market.

From a small beginning in 1950, this export has risen in recent years to ca. 100 000 m³ annually. Other countries are of less importance. Switzerland, the second largest buyer after Italy, has an average import of only 6 400 m³.

Pitprop exports have been made to a greater number of countries. W. Germany dominates with a steady average import of 97 000 m³. The next biggest buyer has been Hungary with an average of 39 000 m³ annually. Smaller transactions have regularly taken place with Italy and Belgium, while more occasional deals have been made with France and Turkey.

Table 30. French raw-wood exports by country of delivery in 1 000 m³. Annual average 1950—59.

Taulukko 30. Ranskan raakapuun vienti tuojamaittain keskimäärin vuodessa vv. 1950—59, 1 000 m³.

	Coniferous logs *Havutukit*	Broad-leaved logs *Lehtipuu-tukit*	Pulpwood *Paperipuu*	Pitprops *Kaivospuu*	Sleepers *Ratapölkyt*	Total *Yhteensä*
Austria	—	0.8	—	—	—	0.8
Belgium	26.5	155.4	11.9	26.3	18.7	238.8
Czechoslovakia	—	0.6	—	—	—	0.6
Denmark	—	0.6	—	—	—	0.6
Finland	—	1.5	—	—	—	1.5
W. Germany	6.6	48.9	41.1	12.4	34.1	143.1
Greece	4.2	—	—	0.3	8.2	12.7
Hungary	—	0.8	—	—	—	0.8
Ireland	0.1	—	—	—	9.4	9.5
Italy	59.3	24.0	16.9	35.8	0.1	136.1
Netherlands	7.6	43.7	0.4	0.8	23.2	75.7
Spain	—	—	—	0.5	—	0.5
Switzerland	31.2	92.0	9.1	—	8.4	140.7
Sweden	—	2.1	—	—	—	2.1
United Kingdom	26.2	6.6	—	73.7	116.0	222.5
Other European countries *Muut Euroopan maat*	0.6	0.3	0.5	0.6	15.3	17.3
Europe	162.3	377.3	79.9	150.4	233.4	1 003.3
Egypt	—	0.4	—	—	6.6	7.0
Israel	—	0.4	—	—	1.3	1.7
Turkey	0.8	0.5	—	3.0	0.1	4.4
North Africa	19.3	20.4	—	89.4	19.4	148.5
Canada	—	0.1	—	—	—	0.1
U.S.A.	—	0.2	—	—	—	0.2
Latin America	—	0.5	—	—	—	0.5
Other countries *Muut maat*	2.6	2.9	1.1	1.8	1.7	10.1
Total — *Yhteensä*	185.0	402.7	81.0	244.6	262.5	1 175.8

Austria's most important markets have thus been W. Germany and Italy.

Finland, Sweden and Austria are at present the raw-wood exporters of W. Europe. Norway can no longer be counted as an export country as her raw-wood balance sheet now more shows a deficit.

Despite her large timber imports, France carries on equally extensive exports. These, therefore, merit closer scrutiny and have been analysed in Table 30.

Italy has been the most important market for French exports of coniferous logs. The latter is also the only export item showing a clear increase (from 17 000 m³ in 1950 to 121 000 m³ in 1959). Next comes Switzerland with a yearly average of 31 000 m³. Belgium and the U.K. can also be mentioned as regular buyers. W. Germany only imported small quantities, except in 1959 when this item suddenly rose to 30 000 m³. The Netherlands, previously a steady buyer, has completely disappeared from the market since 1955. From the table can be seen the proportional importance of exports to N. Africa.

Broadleaved log exports go principally to Belgium, which has bought a regular average of 155 000 m³ annually. The next country in importance is Switzerland, whose average falls slightly below 100 000 m³. The W. German and Netherlands markets have also been important. On the other hand, exports to N. Africa have not been extensive.

French exports of pulpwood were never of any importance before 1959. The W. German average is the highest for the ten years concerned even though exports to this country started as late as 1956. In 1959 no less than 218 000 m³ were exported. The other markets also show a sudden increase during the same year, no doubt attributable to the removal of restrictions then.

The U.K. is the most important market for French pitprops, though exports have fluctuated quite considerably from year to year. The next largest market has been Morocco. On the whole N. Africa seems to have played an important part in France's pitprop trade. Italy and Belgium are also important consumers.

The U.K. is France's most important customer for sleepers, with regular imports of 100 000—150 000 m³ annually. During the last two years this trade has decreased. Otherwise, this item has been exported to rather a large number of countries in Europe, N. Africa and the Middle East. European purchasers included W. Germany, the Netherlands and Belgium.

In total raw-wood imports from France, Belgium and the U.K. compete for first place. Runners-up seem to be the W. German, Swiss and Italian markets, all of which are roughly similar in importance.

Yugoslavia's main role in the raw-wood trade besides fuelwood is in the export of pulpwood and sleepers. Trade is distributed as seen overleaf.

There have been regular exports of pulpwood to Italy, W. Germany and Austria, and occasional exports of sleepers to several countries.

As we saw from Table 23 certain import countries have also participated to some extent in raw-wood exports The following points can be noted:

Table 31. Yugoslavian raw-wood exports by country of delivery in 1 000 m³. Annual average 1950—59.

Taulukko 31. Jugoslavian raakapuun vienti tuojamaittain keskimäärin vuodessa vv. 1950—59, 1 000 m³.

	Broadleaved logs *Lehtipuu-tukit*	Pulpwood *Paperipuu*	Pitprops *Kaivospuu*	Sleepers *Ratapölkyt*	Total *Yhteensä*
Austria	2.0	58.6	—	0.5	61.1
Belgium	0.1	1.0	—	7.3	8.4
France	—	2.6	—	—	2.6
Denmark	0.2	—	—	0 8	1.0
W. Germany	—	160.7	5.9	9.9	176.5
Hungary	—	4.2	—	3.4	7.6
Italy	5.9	296.6	0.7	2.1	305.3
Netherlands	0.1	—	—	2 4	2.5
Switzerland	—	0.2	—	0.7	0.9
United Kingdom	—	—	7.7	3.1	10.8
Egypt	—	—	—	2.3	2.3
Other countries *Muut maat*	0.7	9.6	0.3	1.9	12.5
Total — *Yhteensä*	9.0	533.5	14.6	34.4	591.5

Belgian log exports go mainly to Belgium's neighbours, W. Germany and the Netherlands. This applies to both coniferous and broadleaved log exports. Exports to the Netherlands are showing a falling trend, while the German market has grown in importance. Belgium's small exports of pulpwood have lately been absorbed by W. Germany. Pitprops have been delivered to the Netherlands, W. Germany and France. The Netherlands market has been the most important throughout.

The large-scale exports of coniferous logs from W. Germany in 1950 went to France, the Netherlands and Switzerland. The much smaller deliveries of later years went to Switzerland, the Netherlands and Italy. The export of broadleaved logs is distributed between several countries, of which Switzerland, the Netherlands and Austria predominate. Even Finland has imported small quantities every year. Pitprop exports, which were a little larger, went almost exclusively to France, while those of sleepers were divided between Belgium, the Netherlands and Switzerland.

Portuguese exports of pitprops have been directed mainly to the U.K. Markets of secondary importance include Spain, Belgium and Morocco.

As mentioned earlier, Switzerland exports a small annual volume of coniferous logs. The main market for this trade has been Italy, though France has also purchased to a smaller extent.

There is very little material available from FAO statistics on the distribution

of trade with E. European countries. Internal trade within the East bloc is of minor interest here, but some data should be sought for exports that are directed to W. Europe. In the case of Czechoslovakia this is made possible by a study of import statistics on coniferous logs, pulpwood and pitprops. Here, however, certain discrepancies are apparent, for example, the official total export of coniferous logs from Czechoslovakia in 1958 was given as 104 000 m³, while the various importing countries indicate total imports from Czechoslovakia of 147 000 m³. For all that, it can be seen that Italy, W. Germany and Switzerland, in that order, are the most important markets for coniferous logs. Pulpwood, on the other hand, has gone mainly to W. Germany, with Switzerland and Italy taking smaller quantities. Austria's role in the statistics is insignificant. Czechoslovak pitprops seem, according to the statistics, to vanish into thin air on their way from Czechoslovakia to the importing countries. For example in 1958 when the country exported an official total of 42 000 m³, a mere 2 100 m³ was registered by W. Germany. This indicates probably that this item is being exported to other East-bloc countries. The same phenomenon can be noted in pitprop exports from E. Germany.

No delivery figures are available on the export markets of the other E. European countries. In any case, the total export to W. Europe is rather small.

There is little advantage in studying export distributions to different countries any further. Nothing new of any importance would emerge except the extent to which export and corresponding import figures differ. However, it is interesting to note which countries have received large quantities of raw wood from countries outside Europe. For Canada the following table has been compiled from export statistics:

Table 32. Canadian raw-wood exports to Europe in 1 000 m³. Annual average 1950—59.

Taulukko 32. Kanadan raakapuun vienti Eurooppaan keskimäärin vuodessa vv. 1950—59, 1 000 m³.

	Broadleaved logs *Lehtipuu-tukit*	Pulpwood *Paperipuu*	Pitprops *Kaivospuu*	Sleepers *Ratapölkyt*	Total *Yhteensä*
Belgium	—	2.9	—	—	2.9
France	0.6	114.3	—	—	114.9
W. Germany	0.7	52.8	18.3	—	71.8
Ireland	2.3	—	—	0.2	2.5
Italy	0.2	53.0	—	—	53.2
Netherlands	—	48.8	1.0	—	49.8
Switzerland	—	17.5	—	—	17.5
United Kingdom	29.3	270.4	241.0	41.8	582.5
Other countries *Muut maat*	0.1	0.9	—	—	1.0
Total — *Yhteensä*	32.2	560 6	260.3	42.0	896.1

The minor exports of coniferous logs that find their way from Canada to Europe are distributed between several countries. No analysis of these exports has been considered necessary. On the other hand, exports of broadleaved logs are concentrated on the U.K., with Eire receiving smaller quantities annually. Pulpwood, too, found extensive markets during the 1950's, though the U.K. was continuously the most important customer with an average import of 270 000 m³. Italy has lately been taking large quantities, while the W. Germany market has rather lost its importance. Pitprops and sleepers, as can be seen, are shipped almost exclusively to the U.K.

Even FAO seems to have found it difficult to gather data on the distribution of Soviet raw-wood exports. We must, therefore, be content with figures given by the import countries. The following table is obtained:

Table 33. USSR raw-wood exports to Europe in 1 000 m³.
Annual average 1950—59 and 1955—59.

Taulukko 33. Neuvostoliiton raakapuun vienti Eurooppaan keskimäärin vuodessa vv. 1950—59 ja 1955—59, 1 000 m³.

	Coniferous logs *Havutukit*		Pulpwood *Paperipuu*		Pitprops *Kaivospuu*		Sleepers *Ratapölkyt*		Total *Yhteensä*	
	1950—59	1955—59	1950—59	1955—59	1950—59	1955—59	1950—59	1955—59	1950—59	1955—59
Austria	—	—	8.7	17.4	—	—	—	—	8.7	17.4
Belgium	10.5	21.0	40.4	72.0	17.3	26.2	—	—	68.2	119.2
France	0.4	0.7	45.5	91.0	—	—	—	—	45.9	91.7
W. Germany	24.3	36.2	54.8	109.4	94.1	156.8	—	—	173.2	302.4
Italy	17.1	34.8	19.7	39.4	—	—	—	—	37.1	74.2
Netherlands	18.4	35.6	—	—	2.8	11.4	3.4	1.8	34.6	48.8
Norway	—	—	10.9	21.8	—	—	—	—	10.9	21.8
Switzerland	0.1	0.2	29.3	57.0	—	—	—	—	29.4	57.2
United Kingdom	10.3	20.6	6.0	12.0	279.9	267.6	13.7	27.4	309.9	327.6
Other countries *Muut maat*	43.2	86.0	44.4	88.9	79.0	158.0	—	—	166.6	332.9
Total – *Yhteensä*	124.6	235.1	259.7	508.9	483.1	620.0	17.1	29.2	884.5	1 393.2

Recent coniferous log exports are divided rather evenly between several countries. W. Germany has the highest average because exports to this market started as early as 1953. Hardly any quantities were exported to other markets before 1955. The average for the years 1955—59 has therefore been indicated to give a more precise picture of the development. Exports of broadleaved timber increased towards the end of the 1950's, but are still so small that no closer analysis is necessary.

Pulpwood exports to W. Europe did not begin until 1955. France, Belgium and W. Germany have evidently become the most important markets. In the last

two years Italy, too, has become an interesting market. Norway has purchased smaller quantities. Transactions with Switzerland were mainly confined to the years 1955 and 1956, when this market took a total of 286 000 m³.

Pitprops were exported to the U.K. during the whole decade. The W. German market did not open up until 1954.

The export of sleepers has been regular since 1956, but is still insignificant. The main market is the U.K. In other words, pulpwood and pitprops are the Soviet's principal raw-wood exports to W. Europe. The U.K. is the most important total raw-wood market, because of its extensive imports of pitprops.

As was noted in the introduction, imports of tropical timber do not call for detailed analysis in this study. The following table showing the extent and distribution of such imports should suffice:

Table 34. Imports of broadleaved logs from overseas, 1950—59 in 1 000 m³.

Taulukko 34. Lehtipuutukkien tuonti Eurooppaan muista maanosista vv. 1950—59, 1 000 m³.

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	Average *Keskiarvo*
Austria	1	—	—	2	4	5	10	11	12	17	6
Belgium	42	63	25	23	40	59	72	82	79	137	62
Denmark	2	7	8	6	12	24	26	27	32	53	20
France	191	285	217	176	317	404	381	459	632	651	371
W. Germany	141	182	243	364	546	681	719	783	800	835	529
Italy	19	28	27	57	71	144	162	166	293	408	138
Netherlands	66	90	65	91	112	126	138	140	148	184	116
Sweden	4	11	10	14	30	23	22	25	37	30	21
Switzerland	27	42	23	26	37	54	39	51	42	48	39
United Kingdom	420	581	331	526	322	419	316	371	369	391	405
Other countries *Muut maat*	21	104	147	97	57	115	130	106	112	351	123
Total — *Yhteensä*	934	1 393	1 096	1 382	1 548	2 054	2 015	2 221	2 556	3 105	1 830

From the above, it can be seen that imports of logs from outside Europe increased over threefold within ten years. Half of the total was imported by France and W. Germany. The U.K., clearly the largest importer at the beginning of the decade, has dropped to third place. In W. Germany, in particular, this enormous import growth has seriously hampered the consumption of the home-grown broadleaved wood. However, it has very little direct bearing on the trade of Europe's export countries.

The data supplied hitherto gives some idea of the extent to which Europe's raw-wood trade is an internal affair.

Of all coniferous log exports, 90 % remain within Europe. Only Finland exports some to Egypt and France minor quantities to N. Africa. Exports of

broadleaved logs stay mainly within Europe, with only occasional deliveries to N. African dependencies.

As regards the pulpwood trade, Finland is found to have exported some 10 % to the USSR, while the rest has stayed within Europe. France has exported pitprops fairly regularly to Africa, while in some years Finland has sold to Turkey. In the case of sleepers, France again has made sales to her dependencies; otherwise there is nothing of note. The figures for the other raw-wood groups also indicate that exports are mainly confined to Europe.

On turning to imports, however, the picture changes completely. Europe receives large deliveries from other parts of the world, as shown by the following figures:

Table 35. Raw-wood imports to Europe from non-European countries in 1 000 m³. Annual average 1950—59.

Taulukko 35. Raakapuun tuonti Eurooppaan muista maanosista keskimäärin vuodessa vv. 1950—59, 1 000 m³.

	Coniferous logs *Havutukit*	Broadleaved logs *Lehtipuutukit*	Pulpwood *Paperipuu*	Pitprops *Kaivospuu*	Sleepers *Ratapölkyt*	Total *Yhteensä*
USSR	124.6	19.0	259.7	483.1	17.1	902.5
Canada	18.9	28.8	478.4	246.6	120.0	892.7
USA	14.7	15.4	1.5	20.4	84.2	136.2
Other countries *Muut maat* ..	8.4	1 767.8	27.7	22.8	33.0	1 859.7
Total — *Yhteensä*	166.6	1 831.0	767 3	772.9	254.3	3 791.1

The USSR and Canada are obviously the most important suppliers. Only broadleaved logs come from other parts of the world, mainly from Africa. Soviet deliveries of coniferous logs in the beginning of the decade were insignificant, but during the last few years they have risen to 200 000 m³. There has been practically no import of coniferous logs from any other countries outside Europe. Freightage is the deciding factor. Broadleaved logs, which are usually of valuable tree species, are better able to bear high transport costs, as can be seen from the table above.

When total imports from European countries are subtracted from total imports from the whole world and the figures thus obtained are compared with the corresponding export figures, the following trade balance is obtained for the whole of Europe's raw-wood trade during the 1950's.

In other words, the European raw-wood trade shows an annual deficit of almost 3 million m³. The largest deficit is for broadleaved logs, of which Europe imported 1.8 million m³ annually. On the other hand, Europe is almost self-supporting in coniferous logs. Pulpwood imports exceeded exports by almost

Table 36. Trade balance for European raw-wood exports and imports in 1 000 m³. Annual average 1950—59.

Taulukko 36. Euroopan raakapuun viennin ja tuonnin kauppatase keskimäärin vuodessa vv. 1950—59, 1 000 m³.

	Coniferous logs *Havutukit*	Broadleaved logs *Lehtipuutukit*	Pulpwood *Paperipuu*	Pitprops *Kaivospuu*	Sleepers *Ratapölkyt*	Total *Yhteensä*
Export — *Vienti* ..	86	38	315	238	39	716
Import — *Tuonti* ..	130	1 831	765	717	267	3 710
Balance — *Erotus* ..	— 44	— 1 793	— 450	— 479	— 228	— 2 994

1/2 million m³, though this volume represents not even 10 % of the entire European trade in this item. The deficit for pitprops, almost half a million m³, is very large in proportion to that of the total raw-wood trade. The trade in sleepers is down by 228 000 m³.

No statistics are available for poles, piling, and posts or fuelwood, and thus no comparison can be made between European and non-European trade. The total export figures of fuelwood for European countries seem regularly to exceed the corresponding import figures, which implies a positive fuelwood balance. In the case of poles, piling and posts the situation is reversed. Thus it seems that Europe tends to import from non-European sources — unless the difference in the figures is due to discrepancies in the statistical material. In any case the total non-European trade in these groups is rather small.

As already mentioned, there are important differences between the export and import figures for the internal European trade in raw wood. The discrepancies in these statistics are due to the export of the East bloc countries, which has mainly remained in Europe. The size of the internal European trade does not affect the balance in Table 36.

On taking a broader view of the raw-wood deficit and surveying the total European trade balance for all forest products, we arrive at the following figures in million m³:

Year	Export	Import	Balance
1950	56.3	48.0	+ 8.3
1951	61.1	59.0	+ 2.1
1952	49.3	51.9	— 2.6
1953	56.0	54.6	+ 1.4
1954	64.7	66.7	— 2.0
1955	77.3	81.0	— 3.7
1956	75.6	77.0	— 1.4
1957	78.0	85.2	— 7.2
1958	74 3	82 9	— 8.6
1959	80.6	89.2	8.6
Average	67.3	69.5	— 2.2

At the beginning of the decade, the balance was still a positive one; recent years, however, show a considerable deficit. Nevertheless the deficit for the entire 10 year period is less than that of the raw-wood trade.

Following this survey of the development of the European raw-wood trade during the 1950's, the next chapter will be devoted to analysing forest resources, felling prospects and industrial development in the most important European export countries.

3. Timber trade balance and industrial expansion in the export countries

31. The Nordic countries

331. Finland

Timber consumption in any country is split up into various branches and can thus be classified in different ways. For example SAARI (1948 p. 234) differs between the following six main groups.

1. Raw-wood exports
2. Industrial demand for raw wood
3. Fuelwood for industry
4. Wood for transport purposes
5. Wood for rural farm and household use
6. Other uses.

The demand of categories 2—6 directly or indirectly affects the quantities available for export. To obtain a clear picture of the trends of development, it is first necessary to study felling prospects and the use of timber in export countries carefully. As the analyses of timber trade balances of the export countries are all similar in character and as Finland, with its repeated line evaluations and felling calculations, is considered a leading country in this respect, a more detailed study will be made of the Finnish timber balance. This seems well-founded too, in view of the already mentioned fact, that Finnish raw-wood exports are the largest.

According to SAARI (1948 p. 204), the timber balance in sustained forest management calls for deeper analysis than a mere annual comparison of growth and felling. Modern forest management is not limited to maintaining the forests in their present form, but is systematically striving to increase forest resources and fellings alike. SAARI suggests that such forest management should be called progressive (edistyvä) management. According to these ideas, a timber balance can be based only on definite, systematic progressive felling plans that are simultaneously designed to create the most abundant reserves of growing stock possible.

Trial timber balances drawn up in Finland at the beginning of the 19th century were usually based upon a comparison between the growth and felling of a single year. The results naturally tended to reflect the prevailing economic

situation to an excessive degree. Since then, of course, forest resources have been studied much more thoroughly by repeated line evaluation and investigations into the use to which the wood has been put.

These methods have made possible several forest balances, based both upon comparisons of growing stocks and on those of growth and removal.

According to Ilvessalo, total growing stock changed as follows between the first and second line evaluation surveys:

Year	1922	1 588 million m³
»	1938	1 560 » »

The growth balance determined by Osara, Pöntynen and Erkkilä for 1923—38 showed a surplus of 58 million m³. The only possible interpretation of these contradictory results is either that a systematic error has arisen in the values or an average error has been made according to the calculus of probabilities in the incidental variations of the material. Saari considers (1948 p. 211) »että vv:n 1922 ja 1938 välisenä aikana poistuma ja kasvu lienevät jotakuinkin pitäneet toisensa tasapainossa ja että puuston kokonaismäärässä ei siis liene tapahtunut muutosta.» (*that between the years 1922 and 1938, removal and increment probably balanced each other out, and that no changes occurred in the total growing stock.*)

At the second line evaluation Ilvessalo tried to calculate yields possible under a progressive forest management. He began by considering sylvicultural views from purely biological and geographical aspects and recommended the following felling quantities for private forests in S. Finland, which formed 89 % of the total forest area of the region:

Year	1938—47	13.1 million m³ annually
»	1948—57	20.8 » » »

Actual forest removals in 1929—38 (fellings + felling waste + floating losses) were calculated at 26 million m³ annually. For N. Finland, Ilvessalo arrived at the following figures:

Year	1938—47	7.6 million m³ annually
»	1948—57	4.3 » » »

Osara, Pöntynen and Erkkilä (1948 p. 65) calculated the actual removal here during 1929—38 as 3.9 million m³.

Ilvessalo's suggestion was based on 65 % of the forests in the North being over-aged and in need of regeneration. As Saari points out, it is not often possible to increase fellings as rapidly as purely sylvicultural considerations would indicate. Technical difficulties would arise and it would be very hard to obtain

sufficient labour. These figures in themselves supply therefore no valid basis for a study of actual timber quantities available.

On the other hand, Lihtonen (1946 p. 59) published a felling estimate in which technical and economic factors were taken into consideration. For the period 1948—57 he calculates a possible felling of 34.5 million m³ within Finland's present boundaries. Here, the actual removal was still larger. »Poistumalla tarkoitetaan luovutsmäärän ja kaiken metsästä hakkuiden yhteydessä tai muuten häviävän puun yhteissummaa.» (»*Removal*» *refers to all wood disappearing from the forests as a result of fellings or otherwise.*) (Lihtonen 1947 p. 22). In other words it also includes the »natural removal» which Pöntynen at present calculates as being 1 million m³. On making a closer study of Lihtonen's figures, Saari comes to the conclusion that in 1923—38 the forests were already being overcut to some extent — by 3 million m³ in 1938. At that point, raw-wood exports should have been halted, or the expansion of the wood industry slowed down. In particular, he finds that the sawmill industry before the second world war had expanded in excess of forest resources. This led to a shortage of saw logs which became more acute between the world wars.

Under the peace treaty after the second world war, Finland lost 13 % of her previous forest area; annual growth consequently fell from 45.7 to 40.8 million m³. This, of course, must be taken into account when making comparisons with pre-war balances. According to Pöntynen and Saari, the wood industries in the ceded areas had been consuming 4.3 million m³ of raw wood annually. Roughly speaking, these losses balanced one another out. Many other problems, however, arose in connection with the resettlement of the displaced population, problems that were expected to affect the forest balance. Under the Settlement Act more than 1 million ha of forest were transferred from the State and other public authorities to private ownership. Saari found that all these measures brought about a decrease in the possible annual felling quantity of at least 1.5 million m³. The anticipated increase in farmers' timber requirements was, however, levelled out partly by the better insulation and heating qualities of the new buildings erected and partly by the fact that the relative number of farmers decreased.

In 1948, Saari produced some rather pessimistic figures on raw-wood resources, as compared with Lihtonen's calculations for 1948—1957. He divided the timber quantities available as follows:

	million m³
Raw-wood exports	2.9
Industrial fuelwood	1.2
Wood for traffic purposes	1.4
Wood for farm and household use	12.5
Other uses	2.6
Left for industry	12.3
Felling quantity available	32.9

Even the part allotted to industry was not completely available, as, according to LIHTONEN's estimates, about 1.5 million m³ was growing in isolated regions, such as Lapland, from which removal was uneconomical.

In 1938, industrial consumption of raw wood within Finland's present frontiers was 15.8 million m³.[1] SAARI calculates primary raw-wood demands for industry in 1948, running at full capacity, as 26 million m³. His conclusion is that »teollisuuden koneellinen tuotantokyky on yli kaksi kertaa niin suuri kuin sille liikenevä raakapuumäärä edellyttää.» (*the capacity of the industry is over twice as large as is presupposed by the resources of raw wood.*) (SAARI 1948 p. 241). On the other hand, he himself admits that his figures are based on a series of assumptions that, starting from other premises, could produce different results. He seems somewhat more positive in his conclusion that it should be possible for industry in the future to utilize the waste from the sawmill and plywood industries, totalling 5 million m³. But he considers that the sylvicultural measures taken during recent decades will not yet have any decisive effect on felling programmes in the near future.

After SAARI's study of problems connected with the Finnish timber balance, ILVESSALO in 1956 published the results of the third line evaluation survey of 1951—1953, which gives us fresh material for investigation. According to these figures, timber resources have grown by almost 9 % compared with the figures of the second line survey and amounted to 1 493 million m³ including bark in 1953. It is difficult to say exactly what the reason for this increase is. It can be noted that the demand for raw wood for industry diminished to 7.7 million m³ annually between 1940 and 1945, which permitted a considerable increase in growing stock. But SAARI considers that this saving had entirely been used up by 1947. And against it must be set the high consumption of wood for fuel during the war years.

Before the completion of the third survey, forests resources had also been severely taxed by reconstruction and the settlement of the evacuated population. Likewise war reparations demanded large quantities of timber. If anything, a decrease in timber reserves could have been expected. As this is not the case, it can only be explained by the fact that improved sylviculture has gradually been producing results.

This important increase in timber resources greatly affects felling plans, especially as growth has also increased by 10.8 %. Total growth is now calculated at 46.0 as against 41.5 million m³ according to the figures of the second survey, as readjusted for Finland's present boundaries. ILVESSALO produces the following figures in which he has taken into account both sylvicultural felling and cut for progressive yield in accordance with LIHTONEN's suggestions:

[1] Primary consumption.

	Southern Finland	Northern Finland	Whole country
		million m³	
Sylvicultural cut	32.0	12.0	44.0
Annual growth in 1951—53	35.1	10.9	46.0
Regulated cut for progressive yield	31.3	11.7	43.0
Total removal 1938	32.5	9.3	41.8

As can be seen, sylvicultural fellings and cuts made for a progressive yield do not greatly differ. The felling figures cover a 10—12 year period in the southern part of the country and a 15—20 year period in the northern part. ILVESSALO (1956 p. 178) found that if his felling calculations were followed during the next 20 years development would be as follows:

Table 37. Development of the growing stock, annual growth and cut in the light of regulated cutting for progressive yield in million m³.

Taulukko 37. Metsien puuston kuutiomäärän ja kasvun sekä hakkuusuunnitteen kehitys tuotto-hakkauslaskelman valossa, milj. m³.

		Southern Finland	Northern Finland	Whole country
Growing stock incl. bark — *Puuston kuutiomäärä kuorineen*	At the beginning	978	513	1 491
	After 10 year	1 039	504	1 543
	» 20 »	1 083	491	1 574
Annual growth excl. bark — *Vuotuinen kasvu kuoretta*	At the beginning	35.1	10.9	46.0
	After 10 year	40.5	12.1	52.6
	» 20 »	40.5	12.5	53.0
Average cut per year excl. bark — *Hakkuupoistuma vuotta kohden kuoretta*	During first 10 year period	31.3	11.7	43.0
	During second 10 years period	34.1	12.5	46.6

These figures give quite a different picture of the possibilities from those mentioned previously. Instead of LIHTONEN's 34.5 million m³ available felling quantity, we can count on 43 million and 46.6 million m³ respectively, and even so, growing stock would increase from 1 491 to 1 574 million m³.

The Forest Economy Planning Committee has also requested HEIKURAINEN, KUUSELA, LINNAMIES and NYYSSÖNEN (1960) to work out a new felling forecast (hakkuusuunnite), in which in particular the influence of drainable swamps is also considered. Details are not yet available but the forcast for the whole of Finland seems to be around 46—47 million m³ during the 1960's.

A comparison of these theoretical figures with the actual timber demand during the 1950's gives the following figures, according to PÖNTYNEN (1958 p. 3).

Table 38. Actual consumption of wood in Finland 1951—57 in million m³.
Annual average.

Taulukko 38. Puun käyttö Suomessa keskimäärin vuodessa vv. 1951—57, milj. m³.

Raw-wood exports — *Raakapuun vienti*	4.4		
Industrial raw wood — *Teollisuuden raakapuu*	18.9		
Farm wood — *Maatalousväestön puut*	5.8	(1955—57)	1951—54 = 7.8
Other country population — *Maaseudun muun väestön puut*	4.5	(1955—57)	1951—54 = 4.3
Other uses — *Muu käyttö*	5.3		
	38.8		
Average — *Keskiarvo* 1951—57	40.0		

The quantities used by industry, distributed per tree species, were:

Annual average 1951—57

	million m³	%
Pine	8.54	45.1
Spruce	9.00	47.5
Birch	1.25	6.6
Other	0.15	0.8
Total	18.94	100.0

The demand for spruce is still a little higher, in spite of the expansion of the sulphate industry.

In Talousohjelmakomitean osamietintö II (1960 p. 60), fellings 1959 including cutting and floating losses are given as 43.5 million m³, a total which would also represent average fellings for 1953—1959. Even when cutting and floating losses are borne in mind, which have been calculated at 3.05 million m³, it seems as if the actual consumption of timber has kept fairly well within the yield calculations. Naturally such figures on timber consumption always include certain doubtful points. It is very difficult, for example, to get exact information about circular saw production. It should, however, be possible to count on a 90 % degree of certainty in the statistics on consumption. It is to be noted that PÖNTYNEN's figures on raw-wood demand from 1955 on also cover circular saw production, which further increases the reliability of the statistics.

For the 1960's we can thus count on at least 46 million m³ annually. The Industrial Committee declaration of 1959 (Komiteanmietintö no 4) finds that it should be possible to increase this sum by 2 million m³ of pulpwood if wood of smaller dimensions is used. In his latest study of the felling possibilities, ILVESSALO also finds that some additions can be made. By using 5—8 cm diameter wood as pulpwood and 2—6 cm as fuelwood, and by transferring some 6″ spruce logs of poorer quality to pulpwood, he thinks that fellings of pine pulpwood can

be increased by 2.8 million piled m³, and those of spruce pulpwood by 4.6 million piled m³. On the other hand, the Economic Planning Committee thinks that the sawmill industry during the 1960's should be quite capable of competing with the paper industry, and that »Sahatukkien siirtymistä paperiteollisuuden raaka-aineeksi ei ainakaan suuria määriä ole odotettavissa» (*In any case, large-scale transference of sawlogs as raw material for the paper industry is not to be expected.*) (Talousohjelmakomitean osamietintö 1960 p. 63).

As however the household needs of the farming population show a decreasing tendency (better accommodation, fewer dwelling units) and no increase is anticipated in the category »other uses» (electrification of railways, increased use of fuel oil) it appears that industry can count on a considerable increase of raw material simply on the basis of the recommended felling quantities.

As already mentioned, SAARI (1948) estimates the total demand of the Finnish wood industry at full capacity as 28 million m³, according to the following table:

Table 39. Theoretical production capacity and raw-wood consumption of the Finnish wood industry 1948.

Taulukko 39. Suomen puuteollisuuden teoreettinen kapasiteetti ja raakapuun käyttö v. 1948.

	Production capacity *Tuotanto-kapasiteetti*	Wood utilization per unit of prod. m³ *Puun käyttö tuotos-yksik. kohti, m³*	Raw-wood need million m³ *Raaka-aineen tarve milj. m³*
Saw mills – *Sahat*	1 783 600 stds	9.26	16.5
Plywood mills – *Vaneritehtaat*	260 000 m³	3.66	1.0
Sulphate cellulose mills – *Sulfaatti sellul. tehtaat*	564 250 tons	5.47	3.1
Sulphite cellulose mills – *Sulfiitti sellul. tehtaat*	904 350 »	5.18	4.7
Mechanical pulp mills – *Puuhioketehtaat* ..	884 700 »	2.52	2.2
Particle board mills – *Kuitulevytehtaat*	79 000 »	2.80	0.2
Other industries estimated – *Muut tehtaat arvioitu*	—	—	0.3
Total — *Yhteensä*	—	—	28.0

As the sulphate and board industries can utilize waste from primary production, it is permissible for the original raw-wood demand to be estimated at 26 million m³. According to these calculations, however, an increase in industrial capacity is still hardly to be recommended.

For a deeper analysis, however, the following should be noted. The estimated production capacity for 1948 is theoretical and will never be achieved. Quite apart from restrictions dictated by the economic situation, production difficulties usually prevent an industry from succesfully maintaining its theoretical capacity. On this subject, LEMMEL (1956 p. 103) writes: »In der Sägeindustrie rechnet man mit einer gewöhnlichen Ausnutzung ihrer wirtschaftlichen Kapazität zu 70 bis 75 v. H., während die untere Grenze bei etwa 50 v. H. liegt.» Even to estimate the theoretical capacity of the sawmill industry is a very thankless

task, as the capacity is entirely dependent on the number of shifts the sawmills run. Furthermore there are numerous small circular saws which only operate irregularly. SAARI has based his theoretical calculation on two shifts and has only counted the export sawmills. Estimates of the timber demand of the sawing industry can hardly be founded on anything but data on the actual size of the production. The Finnish Sawmill Owners' Association has tried to elucidate this from different sources, and has come to the result that during the 5 years between 1953 and 1957 sawmill production totalled about 1.3 million stds per year. This would mean an exploitation of some 70 % of the capacity according to SAARI's calculations.

For the pulp industry it is easier to estimate the theoretical capacity, as this industry more regularly works in three shifts. But here, too, a certain unreliability appears because the capacity changes along with the production of different qualities. One should count on factories tending to exaggerate their capacity to their clients rather than the opposite. According to material from the Finnish Cellulose Association, the relation between real production and total theoretical capacity during the 1950's was as follows:

Production of cellulose as a percentage of capacity

Year	Sulphate %	Sulphite %	Total %	Total capacity in tons
1950	85.4	83.4	84.2	1 418
1951	97.5	96.2	96.7	1 432
1952	70.0	80.4	76.1	1 518
1953	75.7	75.9	75.8	1 494
1954	98.2	92.8	95.1	1 653
1955	96.4	96.2	95.8	1 898
1956	93.5	92.4	92.9	1 992
1957	97.8	92.6	94.8	2 168
1958	87.0	87.9	87.5	2 361
1959	92.9	82.9	87.7	2 449
Average	89.4	88.1	88.7	

The average production was approximately 88.7 % of the theoretical capacity. The same tendency can be found everywhere. For example, in 1958, the paper industry was exploited to an extent of 83 % in N. America, and 85—86 % in W. Europe. There is no corresponding material for the mechanical pulp industry, but it is well known that this industry has been faced with much greater production difficulties than the cellulose industry.

In practice the actual timber demand of the sawmill industry can be set at at least 30 % less than the theoretical capacity, working in two shifts, and in the pulp industry at least 10 % under the capacity estimates.

It should also be borne in mind that technical progress leads to an increase

in the amount of refined goods per m³ of raw wood — i.e. to less wastage. A study of the raw-wood requirements of the wood industries in Sweden resulted in the following comparative figures (Skogsindustriens virkesutredning 1958, 1959 p. 94):

Mechanical wood pulp	2.5 m³ per ton dry weight
Bleached sulphite and sulphate	5.2
Unbleached sulphite and sulphate	4.8
Dissolving pulp	5.7
Wallboard	2.8

These figures applied to 1956. The demand per ton has fallen 10—20 % since the 1920's, and is expected to decrease by a further 4 % in 1963 on account of improved timber cleaning methods. In the same study it was noted that the total demand of the sawmill industry of Sweden in 1953 was 8.82 m³ per stds. The figures varied between 8.50 and 9.32 depending on the type of saw used. Circular saws consumed less than frame saws. Today the actual industrial demand of raw wood according to the 1948 capacity figures, would lie considerably under the 28 million m³ mark considered by SAARI.

But the Finnish wood industry has grown enormously since 1948, and an expansion programme of considerable importance is either under way, or is in the planning stage. The production capacity of the pulp industry is expected to develop as follows (According to Metsälehti 1960 No. 7 p. 2).

Table 40. Production capacity of the Finnish pulp and paper industry 1960 and 1962—63 in 1 000 tons.

Taulukko 40. Suomen puuvanuke- ja paperiteollisuuden tuotantokapasiteetti vv. 1960 ja 1962—63, 1 000 tonnia.

	1960	1962—63	Growth *Lisäys*
Mechanical wood pulp — *Puuhioke*	1 200	1 550	350
Sulphite cellulose — *Sulfiittiselluloosa*	1 300	1 570	270
Sulphate cellulose — *Sulfaattiselluloosa*	1 200	1 930	730
Semi-chemical cellulose — *Puolikemiallinen selluloosa*	20	120	100
Total — *Yhteensä*	3 720	5 170	1 450
Newsprint paper — *Sanomalehtipaperia*	860	1 240	380
Other paper — *Muu paperi*	620	740	120
Cardboard — *Pahvi ja kartonki*	500	820	320
Total — *Yhteensä*	1 980	2 800	820

Eventually all the mechanical wood pulp and semi-chemical cellulose will be refined in Finland, and some 350 000 tons of cellulose will be needed for the

manufacture of paper and cardboard. The actual consumption of coniferous timber by the pulp industry is anticipated by Talousohjelmakomitean osamietintö II (1960 p. 64) to have been:

	million m³
1955	9.7
1956	10.0
1957	10.5
1958	10.4
1959	10.8

It is not planned to expand the sawmill industry on a larger scale. Nor can the plywood industry count on any potential expansion. In the Industrial Committee's report (Komiteanmietintö 1959 p. 61), we note the following: »Sen laajentaminen ei tällä hetkellä näytä ajankohtaiselta». (*At this moment, expansion does not seen topical.*) Also Talousohjelmakomitean osamietintö II (1960 p. 63) writes: »Saha- ja vaneriteollisuudesta ei olekaan tiedossa laajennussuunnitelmia.» (*No expansion plans are known for the sawmill and plywood industry.*) In the particle board industry, on the other hand, expansion on a smaller scale is planned; the report mentions 35 000 tons of fibreboard and 20 000 tons of chip board.

Recent consumption of raw wood by the sawmill industry, according to the above mentioned Committee's report is shown in the following table (Talousohjelmakomitean osamietintö II 1960 p. 62):

	million m³
1955	10.8
1956	8.4
1957	8.4
1958	ca. 10.0
1959	11.0

Thus the Committee estimates the demand during the 1960's as 10 million m³. This seems a very conservative figure as the total production during last years has been estimated at about 1.4—1.5 million stds. Even assuming an annual production of 1.3 millions, the demand would more probably be about 11 million m³. The requirements of the plywood and particle board industries have been estimated at 2 million m³ according to the present capacity figures.

There is no reason to doubt the possibilities of carrying out the eventual expansion of the pulp and paper industries. It is clearly feasible to raise most of the capital needed within the country. STJERNSCHANTZ (1956 p. 138) finds that $^2/_3$ of the gross investments needed for the wood industry have been covered by credits, $^3/_4$ of which have been raised in Finland. As is seen, foreign

loans do not play a major role.[1] Other prospects for expanding the wood industry seem highly favourable. There is enough labour, and if water-power is not a sufficient source of energy, nuclear power stations seem very suitable for the pulp and paper industries, which need both steam and electricity. Water power reserves are expected to be almost fully exploited by 1965.

Moreover, expansion mostly takes place within already existing industries, and thus the investment needs are smaller. The first building phase has been estimated at 110 milliard Fmks. Only units of 100 000 tons or more are considered in the case of newly founded firms. Completely new companies of such size can probably only be founded for the cellulose industry using birch wood as raw material. On the other hand, the particle board industry can more easily expand locally, but marketing difficulties may arise as such an industry can easily develop in any country.

How the wood industry will in fact fare, after its expansion projects are completed, is however, an entirely different matter. It seems as if the Finnish industry is in a somewhat worse situation than many of its competitors owing to unrealistic taxation. If, too, Finland finds herself in a worse politico-economical position than other export countries, the situation of the wood industry will become quite a problem. The question of quality also enters the picture here.

This first phase of expansion is already calculated to increase the demand for raw wood by about 5 million m³, which should theoretically halt the export of raw wood. The Industrial Committee report of 1959 finds that the expansion will increase the raw-wood demand for different tree species in various regions in Finland, by the following amounts (Komiteanmietintö 1959 p. 64):

Pulpwood 1 000 piled m³

	Pine	Spruce	Broadleaved timber	Small wood (Spruce)	Total
W. Finland	260	390	80	270	1 000
Päijänne	400	200	700	40	1 340
E. Finland	440	580	800	40	1 860
Iijoki—Kainuu	380	250	—	—	630
Lapland	600	900	50	—	1 550
Total — *Yhteensä*	2 080	2 320	1 630	350	6 380

As can be seen, the greatest increase in demand will be in E. Finland. This is rather significant, as raw-wood exports largely come from other parts of the country. The Industrial Committee's opinion on this increase in demand was that: »Hakkuusuunnitteen puitteissa voidaan teollisuuden laajentamisen ensi vaihe toteuttaa, mikäli käyttöön saadaan myös nykyisin vientiin menevää puuta.» (*According to felling plans, the first phase of expansion of the industry*

[1] In 1959 the World Bank granted Finland 37 million dollars for its expansion projects.

can be implemented if the wood now being exported can be employed.) (Komiteanmietintö 1959 p. 65).

The Industrial Committee found that the following timber quantities not yet consumed by industry were available in Finland:

	million piled m³
Industrial timber	3.6
Export timber	5.0
Small wood	3.0

As export timber and small wood are in no case immediately available for industry, the Committee is of the opinion that after the first phase of expansion there will be no further opportunities for large-scale expansion within the limits of S. Finland's coniferous timber resources. In N. Finland, too, opportunities are almost non-existent.

The next expansion phase, expected to be completed in 1965, will enable 1.6 million tons more pulp and 1.0 tons more paper to be produced than in 1960, and will require a further 2.3 million m³ of raw wood. The Industrial Committee estimates that this second phase of expansion would comprise 700 000 tons of fibre and 500 000 tons of paper products.

How much extra raw wood, apart from the actual fellings planned, the forest industry can count on during the 1960's depends primarily on the handling of the small wood problem and on timber resources in isolated regions. An additional factor is the results of sylviculture.

According to the Small Wood Committee of 1955, the following can be considered small wood.

1. All coniferous wood with a top diameter of less than 8 cm.
2. Broadleaved timber sold in loose measure.
3. Poor quality timber.
4. Waste wood.

The following points can be noted in this connection. The profitability of using small wood depends mainly on how logging is organized. PUTKISTO (1959) finds that with a removal amounting to 40 million m³, forest machinery has only decreased total labour requirements by some 1.2—1.3 % and this despite the fact that motorsaws in Finland number 20—32 000.[1] On the other hand, the composition of forest work has changed considerably, partly because felling sites have become more concentrated and partly because the work has been transferred to the transport and industrial branches of the wood industry. Labour has also been saved by cutting nearly 70 % of all pulpwood into lengths of 2 metres.

[1] According to Hufvudstadsbladet 25 May 1960 there are now 40 000.

Raw-wood availability has undoubtedly increased during recent years with the reduction of the minimum top diameter for pulpwood. A new assortment has been created with a top diameter of 5—8 cm. As already noted, ILVESSALO has taken this into account in his latest calculations. WEGELIUS (1959 p. 42) also puts the cutting of such coniferous small wood at approximately 2—3 million m³ annually and that of small wood with a top diameter of less than 5 cm at about 2 million m³. There is no doubt that such small wood can be used nowadays for pulp-making. »erfaringer har vist at dimensjoner ned til 3—4 cm toppmål gir cellulose av god kvalitet.» (*Experience has shown that dimensions down to 3—4 cm at the top end give cellulose of good quality.*) (Skogkommisjonen av 1951, 1959 p. 33).

Only 12 % of the growth in birch wood has hitherto been used by industry. The yearly amount available is in fact some 5 million m³, which would yield at least 1 million tons of fibre products. The use of broadleaved wood in the pulp industry is spreading. Even in Finland, some factories are producing pure birch sulphite. In Heinola a factory is being built with an estimated capacity of 90 000 tons (later to be raised to 130 000 tons). In fact, birch fibre improves the typographic property of the paper and can be used for the production of all papers except newsprint and kraft paper. For corrugated cardboard (fluting) short birch fibre in the middle layer is a positive advantage.

As already stated, it has not been possible so far to use all the waste wood from the mechanical wood industry. Mechanical barking and the use of unbarked chips is calculated to bring about an improvement of some 3 million m³ annually. It should be noted that all State-owned buildings have been heated with home-grown fuel since 1957 and in 1959 some 1 000 chip furnaces were in use in Finland.

The general tendency at present seems to be for the cellulose industry to be able to refine all the tree species to be found in the Northern countries and that the rest of the fibre industry is willing to take all wood, from bushes upwards. WEGELIUS (1958 p. 107) thinks that solving the small wood problem should make an extra 10 million m³ of raw wood available for industry annually. Apparently ILVESSALO's latest cutting plans include some 6 million m³ of this amount. In any case, it is obvious that under no circumstances can the main part of this wood be exported. An improvement of the industry's raw-wood availabilities unhampered by any corresponding increase in raw-wood exports therefore seems to be possible during the 1960's.

As regards uneconomically situated forests in Finland it is an open question how long such areas will exist in the future. More forest roads are being built yearly, and the mechanisation of logging operations makes possible the opening up of areas which a few years ago were considered inaccessible.

It is also evident that sylviculture is becoming increasingly important for the future felling possibilities. PALOHEIMO (1958 p. 143) finds that: »Tehokas met-

sänhoito kaikissa muodoissaan lisää todennäköisesti puun tarjontaa enemmän kuin uskalletaan laskea.» (*Effective sylviculture in all its forms will probably increase the offer of wood more than one dares to count on.*)

Also the Norwegian Forest Commission of 1951 on the subject of the increase in that country's forest resources during the previous 25 years, concluded, that: »Årsakene til dette er flere, men en bedret skogbehandling er sikkert en av de vesentligste årsaker til denne gledelige utvikling.» (*The reasons for this are many, but improved sylviculture is certainly one of the most important reasons for this happy development.*) (Skogkommisjonen av 1951, 1959 p. 15).

In Finland large scale artificial regeneration and thinning started during the 1930's, and in recent years has been carried on at a rate of 50 000 ha annually. As trees grow fastest at the age of 20—30, results can obviously be seen. According to the third line survey there are however still 1.5 million ha to be sown or planted. ILVESSALO states that the situation in regard to drainable swamps is as follows, in 1 000 ha:

	Southern Finland	Northern Finland	Whole country
Drained	878	327	1 205
Drainable	1 860	1 181	3 041

Continual drainage is calculated to increase felling prospects as follows in million m³:

Year	Southern Finland	Northern Finland	Whole country
1960	0.4	0.1	0.5
1980	1.6	0.4	2.0
2000	3.7	1.3	5.0
2020	5.7	2.7	8.4
2040	6.9	3.4	10.3

At least 1 million ha of swampy forest can also be drained. If this increases growth by 2 m³ per ha annually, an extra 2 million m³ of raw wood will become available. About 1/4 of the total increase in growth, amounting to 12.3 million m³, can be achieved in 20 years.

Mechanisation of forestry, too, has brought about such an improvement that large areas can be swiftly regenerated or drained. With machine planting, for example, 3 men can plant 9 600 saplings a day, compared with 900 by hand. With his technical equipment, modern man can easily change the face of the forest in a very short time. It is also to be noted that the higher the development of sylviculture, the less will be the natural removal in the forests. This should in due time mean another 1 million m³ saved.

The conclusion reached from studying the above facts and figures is that sylviculture will not merely produce results in some remote future, but is already affecting felling prospects during the present decade.

As can be seen from the material investigated here, the industry's demand for raw wood in the mid-1960's will be about 30 million m³ yearly, calculating on a basis of 70 % of the theoretical two shift capacity of the sawmill industry, and 90 % of that of the pulp industry during that time.

There will be no further attempt to study the fuelwood situation, partly because statistics are lacking, and partly because the Finnish export of fuelwood has been non-existent or small.

Assuming that the timber demand of the farming population will gradually decrease, as it did during the 1950's, and likewise that of timber for other uses will fall off somewhat, the following wood-economic balance will be attained. The import of raw wood will apparently remain insignificant and does not need to be taken into consideration.

Table 41. The Finnish annual wood-economic balance around 1965 in million m³.
Taulukko 41. Suomen vuotuinen puutaloudellinen tase noin v. 1965, milj. m³.

Utilisation: *Käyttö:*		
Industrial raw wood / *Teollisuuden raakapuu* — Sawmills — *Sahat*	11.0	
Pulp industry — *Puuvanuketeollisuus*	17.0	
Other industries — *Muu teollisuus*	2.2	30.2
Farming household wood — *Maatalousväestön kotikäyttö*		5.0
Other country population — *Muu maaseutuväestö*		4.5
Other uses — *Muu käyttö*		5.0
Felling waste and floating losses — *Hakkuu- ja uittohäviöt*		3.5
Annual average exports 1950—59 — *Vuotuinen keskimäär. vienti 1950—59*		4.2
Total — *Yhteensä*		52.4
Available wood resources: *Käytettävissä olevat puuvarat:*		
According to cutting plans 1956 — *Hakkuusuunnitelmien mukaan v. 1956*		46.0
Later addenda (6—8 million m³) — *Myöhempiä lisäyksiä (6—8 milj. m³)*		7.0
Total — *Yhteensä*		53.0

In view of ILVESSALO's (1960) latest felling estimates and other opinions presented here, it is obvious that this calculation still allows for raw-wood exports approximately equal to those of the 1950's. ILVESSALO, too, considers that if the most recent felling programme can be carried out, the raw-wood demand of the pulp industry will be met despite expansion. The 1959 Industrial Committee also concedes that their cutting calculations are cautious (Komiteanmietintö 1959 p. 48).

On the other hand, the Economic Planning Committee has drawn some rather pessimistic conclusions in its second report. As regards the demand

for timber and the corresponding felling amounts, the Committee quotes 45.5 million m³ for 1965 and 46.8 million m³ for 1970 excluding cutting losses (Talousohjelmakomitean osamietintö II p. 70). These figures correspond fairly well with the above balance. But the Committee finds that there are no corresponding resources to meet the felling plans as due to overcutting during the 1950's these are no longer stable. On the other hand the Committee expects raw-wood exports to decrease to a third of the 1959 exports during the 1960's, i.e. by 2.3 million m³. We believe that the Committee has not sufficiently deeply considered the facts presented here and later. It also seems improbable that the raw-wood export will decrease to the extent they expect. This would call for special measures in the form of severe restrictions, high export duty or similar steps.

We came to the conclusion that from the standpoint of the theoretical timber balance, there still seem to be considerable opportunities for exporting timber. It remains, however, to consider the question from a practical point of view also.

The accuracy of theoretical balances is inevitably open to question. Cutting quantities are based upon a certain felling programme, which is affected by taxation, falls in price, and so on. In practice, therefore, final fellings cannot be foreseen exactly. We run the same risk of error here as in all such forecasts (cf. ERIKSSON 1959 p. 484). A study made by Sydöstra Sveriges Skogsägares Förbund (Skogsindustriens råvaruförsörjning i södra Sverige 1959 p. 14) concluded that the attitude of private forest owners towards felling quantities was affected by the following factors.

Long-term factors:

1. The felling plan.
2. The owner's opinion (in the absence of a felling plan) of the cutting capacity of his forest.
3. The owner's ideas on sylviculture.
4. The owner's finances (savings).
5. The owner's ideas on the value growth of his forest.
6. The owner's idea of the possibility of a currency depreciation.
7. Taxes.
8. Marketing possibilities.

Short-term factors:

1. The need of money or timber for immediate purposes (buildings, machinery etc.).
2. Current timber prices.
3. Finding work for his employees.

According to the investigations of the Royal School of Forestry in Stockholm, the main reasons for deciding felling quantities are: the need of money for running expenses and buildings, the purchase of farming machinery and investments in forestry and sylviculture.

Private forest owners in Finland number over half a million. In other words, their fellings are impossible to control. Neither can the wood industry enforce a special price policy to keep fellings within the limits of the balance calculations. Timber prices are as we know dependent on the world market. LIHTONEN (1947 p. 65) finds that »Yksityismetsien hakkuumäärät seuraavat tarkoin kantohintatasoa.» (*Fellings in private forests exactly follow the stump prices.*) Likewise ERIKSSON (1959 p. 484) writes: »Det torde ej kunna bortresoneras att uttagen påverkas i de enskilda fallen av beskattningskonsekvenser, penningvärde försämring o. dyl.» (*One cannot deny that the cuts are affected in individual cases by taxation, depreciation in the value of money, and so on.*) To what extent the private forest owners in Finland cut for sale will thus depend on price developments, i.e. on the general economic situation. Fluctuations in the currency values will also have an effect; when inflation seems imminent, forest owners prefer to let their forests grow. Forest balances considered fully practical from the standpoint of felling and transport are therefore still purely theoretical as far as the real actions of the forest owners are concerned.

There is little cause, however, to expect forest owners to »go on strike» for any length of time. Financially, they need the income to keep their enterprises going. Since private forestry is usually connected with farming, their situation is often acute. It is a well-known fact that many farms in Finland are unprofitable (cf. PIHA 1957 p. 24). On the other hand, fellings in State forests can naturally be made in accordance with economic planning. LINNAMIES (1960) has calculated felling possibilities during the coming rotation period, aiming at the most favourable stock development possible, without reducing fellings. If his plan is followed, the cuts in State forests will be kept down to 6.38 million m³ annually during the next ten years. As has however already been noted, most Finnish forests are private. Furthermore, under the Land Settlement Act, the State and other public bodies continue to hand over forest land to private owners.

An analysis of the wood-economic balance during the 1960's on one hand, and the expansion of industry on the other, lead to the following conclusions:

Industrial expansion can be carried through within the limits of the timber quantities theoretically available without exports being cut down.

In practice this depends on the views held by private forest owners on felling. There is no reason to expect difficulties as long as the economic situation develops normally.

332. Sweden

Sweden, too, has witnessed a rapid expansion of the wood industry during the 1950's, and still more is planned. Swedish forest resources have been brought to light by repeated country-wide surveys. As early as 1911, the province of Värmland was surveyed, and since then surveys covering the entire country

have been made in 1923—29 and 1938—52, and a third survey under a new system is under way between 1953 and 1962. Special studies, too, have been made to analyse the question of resources versus industrial expansion. Skogsindustriernas Sammarbetsutskott, in collaboration with the State Institute of Forestry Research, recently published an investigation »Skogsindustriens Virkesutredning 1958», aimed at forecasting the quantities available in practice for cutting in the immediate future. The investigation can be compared with the cutting estimates of LIHTONEN and ILVESSALO in Finland. The S. E. Swedish Forest Owners Federation also set up a committee to supplement the 1958 investigation with further details (Skogsindustriens råvaruförsörjning i södra Sverige 1959). The situation in S. Sweden has been of especial interest since an investigation (SOU 1952: 15) into the wood industry of S. Sweden in 1952 brought to light the fact that there was a large surplus of timber in this part of the country. Apart from these and other (SOU 1953: 19, SOU 1956: 33) official investigations some timber estimates have also been made privately though it is not possible to control the accuracy of these. One example is a study in 1960 by the Hylte Company.

Since the four most important balances have started out from rather different premises, owing to dissimilarity of survey materials and basic assumptions, the resulting figures can hardly be expected to correspond. But ERIKSSON (1959 p. 484) considers that if due allowance is made for the dissimilarities between the basic premises, these investigations actually correspond very well. To prove this he has drawn up the following figures to cover Skåne, Halland and Blekinge in S. Sweden. To ensure a proper comparison, he has had to leave out coniferous small wood and broadleaved wood completely.

Estimate No.	Period of investigation	Gross annual felling	Of which industrial timber	Year	Industrial consumption	Surplus
		1 000 m³	1 000 m³		1 000 m³	1 000 m³
1	1947—56	5 420	4 730	1950	3 660	1 070
2	1953—62	6 150	5 560	1954	4 360	1 200
3	1955—64	6 800	5 810	1957	4 460	1 350
4	1960—69	7 100	6 110	1957	4 460	1 650
	Forecast			1960	5 150	960
	data			1963	5 510	600

If these figures are illustrated by graphs, ERIKSSON notes, there is a close correlation between the curves of resources and demand. This seems obvious, but the fact still remains that it has been necessary, as in Finland, greatly to adjust the cutting possibilities within a short time. Material from the various country-wide line surveys clearly indicates that forest resources have increased. Thus the second survey showed a growing stock increase of 7.8 % and an annual growth of 61.5 million m³, as compared with 56.6 million m³ in the first survey.

At the third survey (1953—58) forest resources amounted to 2 050 million m³ and growth to 64.9 million m³ (all these figures include bark). The investigation of 1958 also notes that: »Våra råvarutillgångar har tydligen ökat med 1 à 2 % årligen». (*Our raw material supplies have apparently increased by 1 to 2 % annually.*) (Skogsindustriens virkesutredning 1958, 1959 p. 122).

The investigation of 1958 was based upon the felling calculations of the State Institute of Forestry Research, which was based on the results from the third survey. The country was divided into six areas. The first area covered the provinces of Norrbotten, Västerbotten, Västernorrland, the area of Jämtland and the commune of North Ljungdal in Härjedalen, in other words the whole of N. Sweden. To separate the other five areas is not so important from the standpoint of the present investigation. The investigators concluded by recommending the following two alternative annual felling quantities for the first 10-year period of 1955—64 (Skogsindustriens virkesutredning 1958, 1959 p. 64).

Table 42. Recommended annual fellings in Sweden 1955—1964 in million m³ f [1].

Taulukko 42. Suositeltavat vuotuiset hakkuut Ruotsissa vv. 1955—1964, milj. m³.

	Pine *Mänty*	Spruce *Kuusi*	Broadl. *Lehtipuu*	Total *Yhteensä*
Alternative a) *Vaihtoehto a)*				
Area 1 — *Alue 1*	6.0	8.1	5.9	20.0
Whole country — *Koko maa*	22.4	25.9	14.5	62.8
Alternative b) *Vaihtoehto b)*				
Area 1 — *Alue 1*	6.5	8.7	6.0	21.2
Whole country — *Koko maa*	24.0	27.9	14.9	66.8

Fellings on waste lands and of deadwood, and from the area north of the forest zone have not been included in these figures. The total for these has been estimated at 0.3 million m³ yearly. Similarly, broadleaved timber under 10 cm in the Areas 4—6 (S. Sweden) has been omitted. Separate investigations put the quantity available from this source at 1 million m³. These quantities do not affect the overall picture. The felling calculations are based upon purely sylvicultural considerations, and thus require a closer study to establish the practical utility of the timber resources. The 1958 investigation finds that the following modifications are needed.

Timber under 2″ should not be counted as an available reserve, as the removal costs are too high.

[1] m³ f = forest cubic metre (whole trunk inclusive bark but exclusive of stump).

The various cutting and floating losses have been carefully studied and as the results are of considerable interest also from the point of view of Finland, the following details can be noted. For saw logs, a trimming allowance (»längdövermål») of 4″ has been calculated for floated timber and 3″ in other cases. The trimmings left after cutting can however be used for other purposes.

In cutting pulpwood, no trimming allowance is needed, but when pulpwood is cut in standard lengths over an extensive area, a certain amount of waste cannot be avoided. The amount of this timber loss has twice been investigated independently, and an adjustment estimated according to the following percentage of waste per length.

Pine pulpwood	3—6″	in	3	meters	length	7.0 %
Pine pulpwood	»	»	2	»	»	3.5 »
Spruce pulpwood	3—7″	»	3	»	»	4.4 »
Spruce pulpwood	»	»	2	»	»	2.0 »

It is obviously much more advantageous to cut pulpwood in lengths of 2 metres. Part of the industrial timber wasted can naturally be used as fuelwood or small wood, but all the same it reduces the total quantity of wood available for the pulp industry.

Furthermore, the volume has been reduced, but as the method of calculation is not clear in regard to region, size and species, an average 1 % volume decrease has been made to allow for defects in the logs and pulpwood here measured in solid volume. If the pulpwood is measured piled, only rejects are excluded. Butt ends left in the forests amount to ½ % of the useful timber volume, according to the Committee's estimates.

As for coniferous timber, gross resources must according to the above be reduced by 1 ½ % for timber measured solid and ½ % for piled timber.

In the case of broadleaved timber, technical defects and waste are even larger. In a study made by Svenska Cellulosa AB of cutting results per m³ of birch pulpwood in 3 metre lengths, the useful yield was calculated to be some 82 % of the total. Previous estimates of sinking losses in floating, 1 % for saw logs and 2 % for sulphite wood and 3 % for sulphate wood, are now considered to be excessive. The investigation has used a more careful basis for calculation and different percentages for different regions.

It can be noted that, as in Finland, the use of fuelwood has diminished considerably since the war. In Sweden, distinction is made between the following consumption groups.

1. Household wood for farmers or private forest owners (own felling).
2. Wood sold for house heating purposes.
3. Industrial fuelwood.

According to the agricultural census of 1956, farm units dropped from 414 000 in 1944 to 354 000 in 1956. As many farms have been completely abandoned or amalgamated with bigger ones, a decrease in the use of household wood is natural. In 1956 it was estimated at 7.5 million piled m³ of which 6.6 million piled m³ represented forest timber, and the rest waste wood.

The S. Swedish wood industry investigation (SOU 1954: 29) showed that fuelwood put up for sale amounted to about 5 million piled m³ of forest wood and 1 million piled m³ stickwood, i.e. wood from demolished buildings, industrial waste etc. That sold from the forest consisted of 2 million piled m³ of coniferous and 3 million piled m³ of broadleaved timber. A large part of the coniferous fuelwood was considered utilizable as pulpwood. According to the investigation of 1958 this fuelwood for sale decreased by about 30 % between 1951 and 1956. This trend has evidently continued, due to the use of coal, oil and electric stoves. Present demand for this group should be less than 3 million piled m³. Whether or not the trend is desirable is a different question. The value of fuel oil imported into Sweden already equals the total value of all pulp exports.

Data on industrial fuelwood is to be had from the official statistics of all enterprises with a minimum of 5 employees. The principal users of fuelwood are lime and tile manufacturers, the metal and glass industries, dairies and breweries. Thus there is little cause to expect any decrease in the use of this wood (which totals ca. 1 million m³).

Adjusted to solid measure and divided between broadleaved and coniferous species, the forest wood part of the total demand for fuelwood can be estimated as follows, in 1 000 m³:

	Coniferous	Broadleaved	Total
Area 1	340	850	1 190
Whole country	2 000	3 120	5 120

Thus 2 million m³ coniferous timber is still being used as fuelwood. It should be observed, though, that the main part of this is certainly low-value wood of one kind or another. It seems probable that part of this quantity can be used for pulp and board production in the future.

Charcoal wood and other household wood are estimated at a total of 580 000 m³ annually according to the 1958 investigation, and the consumption of veneer and plywood and matches at 250 000 m³ annually. Varied annual fellings for sale and for exports are calculated at 1.8 million m³. Altogether 7.8 million m³. goes to these fields of use. It is to be noted that the Committee excludes 1.2 million m³ export wood from the timber quantities available for industry, without discussion of the possibility of diminishing exports.

The timber demand for sawmills can be estimated with fair accuracy on the basis of the general sawmill surveys of 1953 and 1958. During this period the total number of sawmills fell from 7 924 to 7 511. The total number closed

down was still larger, as no less than 417 new mills have been founded since 1952.

Production of coniferous sawnwood at the sawmills amounted to:

Year	1 000 stds
1927	1 548
1937	1 615
1947	1 342
1953	1 537
1954	1 775
1955	1 792
1956	1 620
1957	1 640
1958	1 710
1959	1 500
Average	1 608

Not all small private sawmills seem to have been included in the 1953 survey, so actual production was probably a little higher. The production percentage of North and Middle Norrland has dropped from 48 % to 23 % since 1927. The production of broadleaved sawnwood has been low, the average being some 30 000 stds during the 1950's. It is probable that no increase in the production of sawn goods can be expected, as already noted earlier. The raw-wood demand can therefore be estimated as follows, on the basis of a 1.6 million stds production regardless of the theoretical capacity (in 1 000 m³):

	Pine	Spruce	Broadleaved	Total
Area I	2 349	1 055	0 013	3 417
Whole country	8 425	6 304	0 307	15 036

The capacity and estimated expansion of the pulp and wallboard industry, according to the investigation of 1958, are shown in the following table:

Table 43. Production capacity of the Swedish pulp and board industries in 1 000 tons.
Taulukko 43. Ruotsin puuvanuke- ja levyteollisuuden tuotantokyky, 1 000 tonnia.

	1955	1959	1963	Increase in %. *Lisäys %*
Mechanical pulp *Puuhioke*	864	1 253	1 381	60
Semi-chemical pulp *Puolikemiallinen selluloosa*	—	52	144	144
Sulphite cellulose *Sulfiittiselluloosa*	1 642	1 838	2 027	23
Sulphate cellulose *Sulfaattiselluloosa*	1 335	1 883	2 477	86
Wallboard *Levyt*	427	643	663	55
Total — *Yhteensä*	4 268	5 669	6 692	57

Wallboard here comprises particle board. In the study of 1956 (SOU 1956: 33 p. 118), the investigators estimated pulp production for 1960 at 5.3 million tons, which corresponds fairly well with the actual situation at present, and also correlates well with the industrial statistics of Kommersekolegii. Since screenings were not consistently included in the data supplied by the companies to the investigators in 1958, the industrial statistics show slightly higher production figures.

The expansion of the pulp industry is mainly taking place in S. Sweden. A comparison between the years 1955 and 1963 indicates a probable rise in production capacity of only 41 % in Area 1, as against 75 % and 122 % in Areas 5 and 6. In general, 35 % of the pulp manufactured in 1955 was used by the companies themselves for further refining; the corresponding percentage in 1963 is estimated at 40 %.

The timber demand of the pulp industry working at the above capacity is:

Table 44. The timber utilisation of the Swedish pulp and board industry in 1 000 m³.
Taulukko 44. Ruotsin puuvanuke- ja levyteollisuuden raakapuun käyttö, 1 000 m³.

	1955	1959	1963	Increase in % *Lisäys %*
Pine pulpwood *Mäntypaperipuu*	4 750	6 960	8 970	89
Spruce pulpwood *Kuusipaperipuu*	10 420	11 930	13 130	26
Small wood *Pienpuu*	270	710	810	200
Broadl. pulpwood *Lehtipaperipuu*	630	1 280	1 940	208
Sawmill waste *Sahausjätteet*	2 180	2 510	2 640	21
Total — *Yhteensä*	18 250	23 390	27 490	51

The figures given on p. 69 have been used in these calculations. The table shows that the raw-wood consumption is not expected to increase at the same rate as production. This, as has already been pointed out, is due to the fact that technical improvements are expected, and that the increase in production will be greatest for articles for which the least timber is used. Of the total timber amount used, 10 million m³ comes from Area 1, i.e. N. Sweden.

As the figures show, fellings are expected to increase considerably. There is no trace, though, of any revolutionary change in the general ratio of demand for raw wood. The fastest increase is in the demand for broadleaved pulpwood, but it is calculated to amount to a mere 7 % of the total timber demand in 1963. In the coniferous group the demand for pine is expected to rise by almost 90 %, but spruce remains the largest group. The use of sawmill waste does not

seem to be growing very much either, as no increase in sawmill production can be expected. Waste is estimated at a total of 3.5 million m³, of which three-quarters will be utilized in 1963.

The figures based upon the 1958 investigation must already be considered a little out of date, for further production expansion projects have been planned recently (cf. Skogen 1960 No. 2 p. 30). The sulphate pulp capacity is expected to increase by 790 000 tons, thus raising the demand by 2 million m³. A considerable amount of this can be produced from broadleaved timber, small wood, and even sawmill waste.

According to the 1958 study the demand for small wood is certainly growing rapidly, but is not yet expected to reach the 1 million m³ mark in 1963. According to SOU (1954: 29 p. 10) small wood is defined as in Finland, i.e. coniferous timber under 3″ in diameter, broadleaved wood of all sizes, defective timber and sawmill waste. The 1958 investigators found that: »Med hänsyn till höga avverknings- och hanteringskostnader är klenvirket, så långt nu kan bedömas, ingalunda utnyttjningsbart i sin helhet och därför ur bruksvärdesynpunkt en tämligen oviss tillgång.» (*In view of the high costs of cutting and handling, small wood, as far as can be judged, cannot be exploited as a whole, and thus is from the standpoint of use value a rather uncertain source.*) (Skogsindustriens virkesutredning 1958, 1959 p. 75). The theoretical reserves of coniferous small wood are estimated at 3 million m³.

Actual felling figures according to the stump survey of 1953—1958, averaged about 46 million m³. The Forestry Board estimated this figure at 49 million m³.

Table 45. Annual fellings in forest and pasture areas 1952/53—1957/58 in Sweden, in million m³f.[1]
Taulukko 45. Ruotsin metsien ja laidunmaiden vuotuiset hakkuut vv. 1952/53—1957/58, milj. m³.

Felling year *Hakkuuvuosi*	Area 1 *Alue 1*	Whole country *Koko maa*
1952—53	10.9	38.8
1953—54	14.0	49.6
1954—55	13.0	45.9
1955—56	12.9	40.1
1956—57	15.8	47.4
1957—58	18.8	51.8
Average — *Keskiarvo*	14.2	45.6

For a more detailed study, here is the actual consumption of timber in 1954, according to the investigation of 1956 (SOU 1956: 33 p. 130).

[1] m³f = forest cubic metre.

Table 46. Consumption of wood in Sweden 1954 in million m³.
Taulukko 46. Puun käyttö Ruotsissa v. 1954, milj. m³.

	Industrial timber *Teollisuuden puu* pine *mänty*	spruce *kuusi*	Coniferous small wood *Havupienpuu*	Broadl. *Lehtipuu*	Total *Yhteensä*
Saw logs — *Sahatukit*	8.6	6.8	—	0.25	15.6
Plywood and match logs — *Vaneri- ja tulitikkutukit*	0.1	—	—	0.08	0.2
Pulp and board wood — *Vanuke- ja levypuu*	4.5	10.3	0.1	0.53	15.3
Miscellaneous wood for sale — *Sekalainen myyntipuu*	0.4	0.2	—	0.06	0.6
Miscellaneous household wood — *Sekalainen kotikäyttöpuu*	0.1	0.1	0.1	—	0.3
Fuelwood — *Polttopuu*	0.7	0.9	0.6	3.25	5.4
Charcoal wood — *Hiiltopuu*	0.1	0.1	0.2	—	0.4
Total — *Yhteensä*	14.4	18.3	0.9	4.1	37.7

The investigators estimated the quantities available per year at 38.5 million m³ for coniferous timber and 8.5 million m³ for broadleaved. From the coniferous quantity 340 000 m³ has been deducted to cover exports. The usual cutting and floating losses, have also been borne in mind.

A geographical distribution of felling prospects in Sweden, according to alternative a) in the 1958 investigation, produces the following figures indicating the balance between supply and demand, in 1 000 m³.

	Coniferous timber 3″ in diam. and over		Small wood		Broadleaved wood	
Area	1957	1963	1957	1963	1957	1963
1	— 149	— 1 534	+ 884	+ 809	+ 643	+ 433
2	— 624	— 954	+ 136	+ 86	+ 192	+ 142
3	— 130	— 570	+ 356	+ 146	+ 342	+ 152
4	— 1 329	— 2 444	+ 186	+ 81	+ 354	+ 114
5	+ 2 241	+ 1 231	+ 373	+ 323	+ 569	+ 479
6	+ 1 219	+ 199	+ 389	+ 359	+ 990	+ 690

Industrial timber shows a surplus only in Areas 5 and 6. Timber transfers between the different areas have not been included in this table. Thus it only shows a comparison between the reserves and the internal consumption of each area. It is however easy to see that the surpluses are found in S. Sweden. It therefore seems quite likely that the N. Swedish sawmill and pulp industries will continue to buy raw wood from Finland.

If a timber balance for Sweden around 1965, based upon material already studied, is drawn up, the following figures emerge:

Table 47. The Swedish annual wood-economic balance around 1965 in million m³.
Taulukko 47. Ruotsin vuotuinen puutaloudellinen tase noin v. 1965, milj. m³.

Utilisation: *Käyttö:*			
Industrial raw wood *Teollisuuden raakapuu*	Sawmills — *Sahat*	15.0	
	Pulp industry — *Puuvanuketeollisuus*	25.0	
	Other industries — *Muu teollisuus*	1.9	41.9
Farming household wood — *Maatalousväestön kotikäyttö*			5.0
Other uses — *Muu käyttö*			0.8
Felling waste — *Hakkuuhäviöt*			3.0
Annual average exports 1950—59 — *Vuotuinen keskimäär. vienti 1950—59*			1.2
	Total — *Yhteensä*		51.9
Available wood resources: *Käytettävissä olevat puuvarat:*			
According to cutting plans — *Hakkuusuunnitelmien mukaan*			47.0
Annual average imports 1950—59 — *Vuotuinen keskimäär. tuonti 1950—59*			0.8
	Total — *Yhteensä*		47.8

As was the case with the Finnish timber balance, these figures are entirely theoretical. To what extent the actual fellings will correspond to the alternative estimates put forward is open to doubt. It seems as if alternative b) has been difficult to follow. For instance, Svenska Cellulosa Ab estimate that the firm's fellings of industrial timber in 1959 represented a mere 70 % of the growth. The situation in Sweden, however, is somewhat different from that of the other Northern wood exporting countries, as can be seen in the following table on forest ownership:

Forest ownership	Finland %	Sweden %	Norway %
State forests	29	18	13
Other public forests	2	7	6
Company forests	7	25	9
Private forests	62	50	72

In Sweden, State, public and company forests together represent 50 % of the total forest area, so there are obviously somewhat better opportunities to follow planned felling programmes than in Finland and Norway.

As the timber balance shows, equilibrium is fairly good when the total broadleaved timber resources are included. In fact, Swedish industry so far can only use up a small part of these resources. Furthermore, 3 million m³ is used as fuelwood. If the fellings are as estimated, the annual situation between 1957 and 1967 will be as follows in million m³ according to alternative a).

	Pine	Spruce	Total	Broadl.	Small wood 2—3″
Fellings	17.6	19.2	36.8	13.0	3.1
Adjustments	2.3	2.0	4.4	7.8	—
Reserves of forest industry	15.3	17.1	32.4	5.2	3.1

Industry will such only receive 5.2 million m³ of broadleaved timber and of this amount only 4.4 million m³ can be used as pulpwood. (SJÖSTEDT 1960 estimates 4.1 million m³.)

The corresponding demand will be as follows, in million m³:

Year	Pine	Spruce	Total	Broadl.	Small wood 2—3″
1957	14.0	17.2	31.2	1.3	0.7
1960	15.8	18.5	34.3	2.0	1.1
1963	17.2	19.3	36.5	2.4	1.2

and the difference between supply and demand as follows:

Year	Pine	Spruce	Total	Broadl.	Small wood 2—3″
1957	+ 1.3	— 0.1	+ 1.2	+ 3.0	+ 2.3
1960	— 0.5	— 1.4	— 1.9	+ 2.4	+ 1.9
1963	— 1.9	— 2.2	— 4.1	+ 2.0	+ 1.8

Felling alternative b) would produce the following situation:

Year	Pine	Spruce	Total	Broadl.	Small wood 2—3″
1957	+ 2.8	+ 1.5	+ 4.3	+ 3.0	+ 2.5
1960	+ 1.0	+ 0.2	+ 1.2	+ 2.4	+ 2.0
1963	— 0.4	— 0.6	— 1.0	+ 2.0	+ 1.9

The possibility of supplying industry with sufficient raw material during the next 10 years does not seem very promising according to the 1958 investigation. In 1963, at the latest, there will be a deficit of coniferous timber, even if alternative b) can be followed.

It should be noted however that the adjustments include 1.2 million m³ of export raw wood. According to alternative b) therefore, equilibrium will be maintained if export is halted. It is also important to take in consideration the rather extensive imports of raw wood that Sweden has received from other countries, especially from Finland and Norway. According to the analysis in the previous chapter, the average of such imports during the 1950's was 0.8 million m³. The 1958 investigation took the figure as 480 000 m³.

The figures for the raw-wood demand in the pulp industry are also theoretical and presuppose full production. As already stated, the actual demand can be

estimated at some 10 % lower than the figures given here. For example Svenska Cellulosa Ab writes in its annual report (1960 p. 8): »Genomsnittligt för samtliga slag av kemisk massa torde kapaciteten ha utnyttjats till omkring 90 %.» (*On an average for all chemical pulp, the capacity has probably been utilised to the extent of about 90* %).

As already mentioned, the S. E. Swedish Forest Owners Federation set up a committee of experts in 1959 to continue the investigations of 1958. Here timber transactions between different areas of the country were taken into account and South Sweden was divided into two halves. According to this investigation, it should be possible, in view of the low felling quantities between 1955 and 1959, to increase cuttings of coniferous timber during the 1960's by 0.3 million m³.

Forecasts regarding the utilization of small wood appear unnecessarily cautious. As in Finland, it is doubtful whether the exploitation of small wood will remain uneconomical in any part of Sweden for long. SJÖSTEDT (1959 p. 494) finds that: »Centralisering är helt enkelt absolut nödvändig för genomförande av mer rationella, ekonomiska avverkningsmetoder och utnyttjande av maskiner.» (*Centralisation is quite simply absolutely necessary for the implementation of more rational, economic felling methods and the use of machines.*) As evidence he produces the following figures from a forest area in central Sweden.

Year	Annual felling in m³	Number of felling sites	Volume of felling per site in m³	Area of felling site in ha
1928	80 000	186	430	14
1958	146 000	30	4 870	117

Such rationalisation should also permit a more economical use of small wood. The most recent expansion projects for the sulphate industry (bleached birch sulphate) will also increase the demand for small wood. Of especial interest is the project at the Hylte Pulp Mill where the magnesium sulphite method is to be adopted. The small wood investigation (SOU 1954: 29 p. 119) states that the most positive economic results were obtained when such wood was used as raw material in the pulp industry. The rather minor use made of small wood up to now seems to have been due to sufficient supplies of industrial timber.

Technical achievements in the board industry are also increasing the possibilities of full utilization. A new wallmaterial of pressed woodwaste has been announced. Any kind of small wood can be used for this board, regardless of type and shape (forest chips framesaw dust etc.) (cf. Skogen 1960 No. 1). Chip-furnace heating has also been successful, especially in Skåne. Thus the entire heating requirement of the Brolz papermill has been met by burning chips (cf. Skogen 1960 No. 4 p. 82).

As regards the achievements of sylviculture, the same conclusions can be reached as for Finland. Regeneration had already been initiated in Sweden by

the end of the 19th century, while thinning had been carried out since the 1910's. The investigation of 1958 did in some degree take into consideration the effects of sustained culture. In estimating a deficit of 4 million m³ for coniferous wood in 1963 according to alternative a), the investigators thus seem unnecessarily pessimistic. However, HOLGERSSON (1959 p. 431) may be justified in considering that the expansion projects will use up most of the raw-wood surplus in South Sweden. For more extended forecasts, it should be noted that the yield so far is only 73 % of the theoretical maximum (cf. Streyffert 1953 p. 14).

As a conclusion we can say that it seems possible to meet the demand for raw wood in industry during the present decade. For the period 1965—1974 also the investigators of 1958 estimate an increase possible in fellings of coniferous timber of 3 million m³ according to alternative a) and 2.3 million m³ according to alternative b). On the other hand, according to the felling plans, there will still not be enough raw wood available for export. The question of continuing such exports will therefore become mainly a question of business economy and trade policy.

333. Norway

The Norwegian wood industry is much smaller than the Finnish and Swedish. Whereas the export of wood products accounts for some 80 % of total exports in Finland and 40 % in Sweden, the Norwegian percentage is a mere 25—30 %.

The forest area was first measured during the country-wide survey of 1919—30, and then during the »Revision» survey of 1937—56. A third country-wide survey was begun in 1957. According to results received, Norwegian forests cover an area of 10.9 million ha, of which 7.5—7.6 million ha are considered productive. But as MATHIESEN (1958 p. 159), among others, points out, much of this must be considered to lie between boundaries of productive and non-productive. The productive area below the coniferous tree line can hardly therefore be estimated at more than 5.5 million ha (cf. Nordiska Skogsunionen 1958 p. 9, where the figure 5.76 is mentioned). The first survey indicated a total increment of 10.4 million m³ and a growing stock of 322.6 million m³. These figures have since been modified considerably: the increment is found to lie between 13—14 million m³. VIGERUST (1957 p. 30) estimates it at 13 243 900 m³ but part of this growth is still considered unattainable.

The 1951 Forest Committee, which completed its work in 1958, found that the growth during one rotation period could be increased by effective sylviculture to 24.2 million m³. Furthermore, production could be raised by forest improvement in the highlands and by draining and fertilizing swamp lands earlier considered unproductive. This would increase the productive forest area by 1 million ha. Such an important production increase is no doubt possible with modern machinery, as already pointed out. Regeneration has been carried on very extensively in Norway for a long time, and at present amounts to

some 150 million seedlings a year. There has also been a certain improvement in the climate, which has promoted regeneration in mountainous regions (SKINNEMOEN 1957 p. 15). These measures cannot however give immediate results; thus the felling quantities recommended by the Forest Committee for the following 20—25 years appear as follows (Skogkommisjonen av 1951, 1959 p. 23):

Table 48. Recommended annual fellings of coniferous wood for Norway 1960—80 in million m³.
Taulukko 48. Suositeltavat vuotuiset havupuunhakkuut Norjassa vv. 1960—80, milj. m³.

Coniferous increment — *Havupuuston kasvu*	Spruce — *Kuusi*	7.8	
	Pine — *Mänty*	3.2	11.0
Felling waste, self thinning (spruce 6 %, pine 9 %) *Hakkuutähteet, luonnon poistuma (kuusi 6 %, mänty 9 %)*		0.8	
Inaccessible quantities — *Nollarajan takana*		0.5	
Increment saving — *Hakkuusäästö*		0.9	2.2
Farming population — *Maatalousväestö*			1.5
Remainder for industry and export — *Ylijäämä teollisuudelle ja vientiin*			7.3

The increment savings are needed to ensure future cuttings, on account of the present abnormal age distribution. It is a matter of conjecture how large these savings must be, and several alternative calculations have been made by SEIP 1957. The Forest Committee considers that 8 % of the growth will be sufficient.

In the household demand of the farming population, the same trend can be noted as in Sweden and Finland. According to VIGERUST (1957 p. 31), the development between 1946 and 1957 for coniferous wood was, in 1 000 m³:

	1946	1957	Decrease in %
Industrial timber from farmers' own forests	558	553	99
Fuelwood and fencing on farms	1 110	982	89
Wood sold	617	264	43
Total	2 284	1 799	79

The decrease is manifest principally in the reduction of wood put up for sale. The $^1/_2$ million m³ estimated to be unattainable on account of transport-difficulties will naturally decrease as more forest roads are built. Already at the beginning of the 1950's about 4—500 km of new roads were being built annually. The Forest Committee considers however that some timber will remain economically unreclaimable also in future due to the difficult terrain in Norway.

Actual fellings in 1950—55 were as follows (Skogkommisjonen av 1951, 1959 p. 25):

Table 49. Annual average fellings in Norway 1950—55 in 1 000 m³.
Taulukko 49. Vuotuiset hakkuut Norjassa keskimäärin vuodessa vv. 1950—55, 1 000 m³.

	Logs *Tukit*	Fuelwood *Polttopuu*	Household use *Kotikäyttö*	Total *Yhteensä*
Coniferous wood — *Havupuu*	7 670	311	1 589	9 570
Broadleaved wood — *Lehtipuu*	39	290	1 119	1 448
Total — *Yhteensä*	7 709	601	2 708	11 018

A comparison shows that fellings during this period were about 0.7 million m³ more than those recommended by the Forest Committee. Previous and also later fellings seem to have been somewhat less. According to FAO, average fellings during the 1950's amounted to 9.2 million m³.

The wood industry has, for some time, been expanding within the limits of raw-wood resources, as seen by the fact that during the 1950's Norway imported both logs and pulpwood, mainly from Sweden and Finland. Logs have been imported from Sweden across the border, sawn and then re-exported to the U.K. As was noted in the previous chapter, the average raw-wood import during the 1950's was 0.5 million m³. This trade also seems to be flourishing during the new decade. During the early part of 1960, Norway has already imported 419 000 m³ of pulpwood from Finland.

The demand of logs for the sawmills averaged 3.1 million m³ between 1947 and 1955. This consumption is estimated to correspond roughly to the home demand for sawn and planed goods. There is no change to be noted on comparing production in 1950—54 and 1955—59. Thus the demand of the sawmill industry appears to have stabilized at the above figures. As noted earlier, Norwegian exports of sawn goods have practically ceased. Only planed goods refined from imported logs are exported. The pulp and paper industry is thus left with 4.2 million m³ of coniferous raw wood, if none of this is exported.

The actual production figures for the pulp industry during the 1950's were as follows, in 1 000 tons.

Year	Mechanical	Chemical	Total
1950	534	481	1 015
1951	558	528	1 086
1952	523	486	1 009
1953	535	543	1 078
1954	644	591	1 235
1955	647	612	1 259
1956	658	595	1 253
1957	668	645	1 313
1958	645	637	1 282
1959	705	678	1 383
Average	612	580	1 192

Norway differs considerably from Sweden and Finland in that Norwegian mills and manufacturing firms tend to be smaller and more numerous. The production consist to 50 % of mechanical pulp. On comparing the first and last halves of the decade, only a 20 % increase in production can be noted. Up to now, no expansion projects have been planned for the 1960's. The average raw-wood demand of the pulp industry for the last 5 years has therefore been 5.5 million m³. The Norwegian timber balance thus appears as follows:

Table 50. The Norwegian annual wood- economic balance around 1965 in million m³.
Taulukko 50. Norjan vuotuinen puutaloudellinen tase noin v. 1965 milj. m³.

Utilisation: *Käytö:*			
Industrial raw wood *Teollisuuden raakapuu*	Sawmills — *Sahat*	3.1	
	Pulp industry — *Puuvanuketeollisuus*	5.5	
	Other industries — *Muu teollisuus*	0.4	9.0
Farming household wood — *Maatalousväestön kotikäyttö*			1.5
Other uses — *Muu käyttö*			1.0
Felling waste — *Hakkuuhäviöt*			0.9
Annual average exports 1950—59 — *Vuotuinen keskimäär. vienti 1950—59*			0.5
	Total — *Yhteensä*		12.9
Available wood resources: *Käytettävissä olevat puuvarat:*			
According to cutting plans *Hakkuusuunnitelmien mukaan*	Coniferous — *Havupuu*	9.6	
	Broadleaved — *Lehtipuu*	2.0	
Annual average imports 1950—59 — *Vuotuinen keskimäär. tuonti 1950—59*		0.5	
	Total — *Yhteensä*		12.1

The following points, too, should be considered in attempting to forecast the future of the Norwegian raw-wood trade. State forests cover 13 % of the total forest area but yield only 4 % of the total timber production. Consequently fellings are entirely dependent on the attitude adopted by private forest owners. New settlements are expected within ten years to cut down timber production by at least 250 000 m³ annually; in other words, by an amount equivalent to the raw-wood demand of a large factory.

According to the »Skogbrukstellingen» of 1957 there were 114 707 units with more than 2.5 ha of productive forest below the coniferous tree line. The corresponding figure in 1927 was 102 293 units. This splitting up of forest land naturally makes it more difficult to increase cuttings. The Forest Committee especially stresses this fact and warns against any further sub-division of forest land.

The Norwegian wood industry on the other hand, has certain advantages

over those of the other Nordic countries: for instance, Norway's harbours are open all the- year- round, freight costs are lower and electricity cheaper. In view of the proximity to Great Britain, the Norwegian exports mainly go to this market.

The conclusions to be drawn as regards the Norwegian wood industry and forest resources are as follows:

No expansion of the wood industry seems to be taking place at the moment. The present production capacity does not permit raw-wood exports of any importance. The possibility of continuing exports at all is to a high degree dependent on corresponding imports of industrial timber.

32. Austria

In 1937, funds were set aside for a country-wide survey which was never carried out. After the second world war, the situation of Austrian forestry was so confused that nothing could be brought to light regarding the correlation between growth and felling. The survey was finally carried out in 1952—56 to »den Zustand des Österreichischen Waldes festzustellen und daraus die nachhaltigen Nutzungsmöglichkeiten abzuleiten.»

The method used was different from that in the Nordic countries. It can best be characterised as »an inventory of stands». Continuous surveying of the forests is planned for the future to throw light on the timber balance. Advance figures of the survey were published in 1956 and final data from the provinces of Kärnten, Salzburg, Steiermark, Burgenland, Vorarlberg and Vienna are now available. According to the advance figures, there are 3.3 million ha of forests, of which 600 000 ha are protected forests with low production. Growing stock averages 150 m³/ha. In view of the state of the forests, and with an eye to sylviculture, an annual felling of 9.1 million m³ is recommended; this leaves 8.5 million m³ for utilisation when felling wastes are considered.

The survey divides Austrian forests into two groups — areas with a management plan, and those without. The situation in the latter group, comprising farm forests proper, has later (1959) been the object of a special study. It is evident that the overcutting during the 1950's mainly took place on small farms. The reason seems to be increasing farm mechanisation, which called for large investments during the past decade.

On the other hand, some consider that utilisation could be maintained at 10.5 million m³ without any over-cutting, provided the State and larger private forests were thinned to a greater extent. The felling programme established by the country-wide survey is based upon the average increment in full grown forests, which is lower than current increment. In view of the age distribution especially in the farm forests, where there are high average aged groups, higher

cutting amounts could be considered extra cutting, but not over-cutting. The following figures illustrate the different ownership groups according to the Austrian classification (cf. BRAUN 1960):

	Growing stock m³/ha	Growth m³/ha	Total yield m³/ha	Yield of thinnings %
State forests	219	3.4	3.9	19
Forest with management plan	179	3.3	3.2	14
Farm forests	134	2.8	2.6	11
Total	160	3.0	3.0	13

The average felling growth was the surest and easiest to estimate, as at the time of the survey Austria did not have the necessary tables on current increment. Farm forests cover 55 % of the forest area and yield 40 % of the felling amounts. The official statistics for 1958 (Jahresbericht der Forstwirtschaft 1958) give an average thinning of 18 % for the whole country. As farm forests are evidently not very well managed and have small growing stocks, it does not seem possible to increase thinnings here. The large private forests and, in particular, State forests are better equipped to produce the ca. 2.5 million m³ required annually to cover the deficit.

In practice, farms need large sums to invest in agricultural mechanisation and therein lies the danger of constant overcutting. Even if fellings in the larger forests increase, this does not improve the situation of the farm forests.

The cutting amounts, distributed between forest owner classes, are seen below.

	1957		1958		1959	
	1 000 m³	%	1 000 m³	%	1 000 m³	%
State forest	1 629	14.5	1 547	15.1	2 121	19.3
Publicly owned forests	753	6.7	623	6.1	864	7.9
Private forests over 50 ha	3 770	33.6	3 520	34.4	3 592	32.7
» » under 50 ha	5 079	45.2	4 551	44.4	4 416	40.2
Total	11 231		10 241		10 993	

Last year's fellings were the lowest in farm forests for six years. On the other hand, removals from the State forests increased, but this was due to wide-scale snow damage, not to any real intention of increasing fellings.

It seems impossible to get any idea of long term production felling in Austrian forests from these surveys. Therefore, a new survey is planned, based upon sample tests of current increment. It is evident that farm-forest growing stock resources must be increased considerably before a bigger progressive yield can be expected. In other words cutting in farm forests should be reduced for a lengthy period. Perhaps the big forests can almost cover this decrease through larger cutting, but there seems to be no possibility of expanding industry on the basis of homegrown raw wood.

As all timber in Austria is transported by land, it is interesting to study the distribution of farm forests among the different provinces:

Table 51. The Austrian farm forests by province 1959 in 1 000 ha.
Taulukko 51. Itävallan maatilametsät osavaltioittain v. 1959, 1 000 ha.

Province *Osavaltio*	Total farm forests *Koko maatilametsäala*	Of which under management plan *Taloussuunnitelmin hoidettu ala*
Steiermark	480	432
Kärnten	369	311
Niederösterreich	312	291
Oberösterreich	199	195
Tirol	130	102
Salzburg	104	63
Burgenland	52	52
Vorarlberg	31	19
Wien	1	1
Total — *Yhteensä*	1 678	1 465

Increment in forests under management plan is estimated at 2.8 m³ per ha, of which 2.6 m³ is considered available. The remaining forests are semi-»management plan» forests or protection forests. As we can see the largest economical forests areas are in the provinces of Steiermark, Kärnten and Niederösterreich, which are close to the borders of Italy and Yugoslavia. These areas have an average rotation of 100 years and would seem, according to the average age of the stands, to be in good condition. However the most excessive fellings have taken place in Steiermark and Kärnten, but the forest ages have been evened out by the over-aged standings left.

The annual felling amounts feasible for the farm forests are estimated at (in 1 000 m³):

Steiermark	1 161
Kärnten	793
Oberösterreich	710
Niederösterreich	693
Tirol	272
Salzburg	228
Burgenland	120
Vorarlberg	102
Wien	2
Total	3 981

The actual felling amounts can be found in the official statistics, the accuracy of which has lately been confirmed by the work of the Timber Balance Committee. The figures obtained, however, cannot be compared. as ownership

distribution differs considerably. But the following figures can be extracted from the official statistics to indicate total fellings in Austrian forests during the 1950's.

Year	Fellings in 1 000 m³
1950	8 957
1951	10 191
1952	9 025
1953	9 855
1954	10 946
1955	11 392
1956	10 590
1957	11 231
1958	10 240
1959	10 993
Average	10 342

The distribution per species during the last few years was as follows:

	Total fellings 1 000 m³		
	1957	1958	1959
Coniferous industrial timber	7 867	7 003	7 712
Broadleaved industrial timber	533	518	574
Fuelwood (conif. and broadl.)	2 831	2 719	2 707
Total	11 231	10 240	10 993

For comparison sake, it can be noted that in 1935 the fellings were estimated at 8.5 million m³. The estimated increment of that year was 9.2 million m³, thus a saving was effected. Nowadays $2\,^1/_2$ times more industrial timber is being consumed than in 1935 but only $^2/_3$ as much fuelwood. The ratio of broadleaved to coniferous wood used as fuelwood is 1 to 1.6.

On comparing actual fellings with the results of the countrywide survey it is evident that considerable overcutting took place during the 1950's. To alleviate the situation, Austria has imported certain quantities of timber (cf.IH 1960 No. 3 p. 8). As was seen from Table 23, such imports during the 1950's averaged 117 000 m³ annually. During the last two years the following quantities have been imported (in 1 000 m³):

	1958	1959
Coniferous logs	5.7	5.3
Broadleaved logs	14.0	41.5
Pulpwood	86.0	105.8
Total	105.7	152.6

The imports came mainly from Yugoslavia and Finland. Fuelwood has also been imported from Czechoslovakia. Imports of coniferous logs, on the other

hand, have been rather small during recent years. These imports have only in a small way satisfied the raw-wood demand of the wood industry.

The latter has been undergoing powerful expansion in Austria. According to »Jahresbericht des Fachverbandes der Sägeindustrie» there were in 1959 no less than 6 860 saws, 5 020 of which were industrial. About 60 % of all saws have an all-year-round production, some 500 seem not to be operating at all, and the rest have a seasonal production. Production during the 1950's is shown below in 1 000 stds:

Year	Coniferous sawnwood	Broadleaved sawnwood	Total
1950	697	22	719
1951	694	19	713
1952	629	20	649
1953	684	18	702
1954	804	26	830
1955	826	30	856
1956	839	32	871
1957	840	37	877
1958	832	33	865
1959	845	36	881
Average	769	27	796

The bulk of this production was exported, the average for the 1950's being 615 000 stds. At the end of the 1930's, exports stood at under 300 000 stds annually. It seems impossible to estimate any theoretical capacity for the sawmills, as the activity of the different units differs so greatly. If instead, actual production is taken as a starting point for the estimation of the raw-wood demand the average for the 1950's was 796 000 stds. But as can be seen, production rose in the middle of the decade. Thus the average for 1955—59 is 870 000 stds which corresponds roughly to a raw-wood demand of 7.0 million m³.

The production of pulp has grown rapidly as the following makes evident, in 1 000 tons:

Year	Mechanical	Chemical	Total
1950	93	250	343
1951	106	272	378
1952	98	258	356
1953	115	295	410
1954	138	372	510
1955	148	404	552
1956	169	405	574
1957	176	477	654
1958	170	474	645
1959	172	488	660
Average	139	170	508

From the actual production during the last 5 years, it would seem that the pulp industry consumed 2.9 million m³ wood annually.

There has been quite a change in this industry's consumption of raw wood during recent years, as indicated, by the following figures:

	1954 %	1958 %
Coniferous wood	76.6	69.4
Broadleaved »	7.1	11.6
Sawmill waste	16.3	19.0

The use of coniferous wood has decreased in favour of broadleaved timber and sawmill waste. Paper waste also is being widely used as raw material for new pulp. This development is obviously part of the struggle to ensure a more stable timber balance. The Austrian wood industries are known to be very modern, especially the pulp and paper industry.

A tentative timber balance for Austria appears as follows:

Table 52. The Austrian annual wood-economic balance around 1965 in million m³.
Taulukko 52. Itävallan vuotuinen metsätaloudellinen tase noin v. 1965, milj. m³.

Utilisation: *Käyttö:*			
Industrial raw wood *Teollisuuden raakapuu* ..	Sawmills — *Sahat*	7.0	
	Pulp industry — *Puuvanuketeoll.*	2.9	
	Other industries — *Muu teollisuus*	0.2	10.1
Farming household wood — *Maatalousväestön kotikäyttö*			1.5
Other uses — *Muu käyttö*			0.1
Felling waste — *Hakkuuhäviöt*			0.6
Annual average exports 1950—59 — *Vuotuinen keskimäär. vienti 1950—59*			0.3
	Total — *Yhteensä*		12.6
Available wood resources: *Käytettävissä olevat puuvarat:*			
According to cutting plans — *Hakkuusuunnitelmien mukaan*		9.1	
Annual average imports 1956—59 — *Vuotuinen keskimäär. tuonti 1950—59* ..		0.1	
	Total — *Yhteensä*	9.2	

Austria's importance as an exporter of wood industry products is not firmly based upon her forest resources. Her exportation of raw wood is therefore rather strange. The only explanation seems to be that transport considerations have fostered such a trade near the borders of the surrounding countries. Whether these exports are to continue will evidently be entirely a question of transport and trade policy. In view of the limited forest resources, there is no justification for maintaining such a trade if the level of imports cannot be kept up also.

33. The USSR and East bloc countries

The Soviet Union's coniferous forests resources are the largest in the world. As yet, there are no exact figures for the total forest area, but it is at present estimated at about 1 065 million ha of which 673 million represent productive forest (cf. Russanow 1959 p. 575). Pöntynen (1954 p. 2) mentions the figure 1 104 million ha for the total forest area and FAO gives the figure 743 million ha for the productive part. Of the 673 million ha mentioned, 518 million ha are situated in Siberia, and 114 million ha in the European part of the Soviet Union. The most usual species are larch (37 %), pine (19 %), spruce (17 %) and birch (13 %).

From a national-economy point of view, forests are divided into three groups. Groups 1 and 2 are different sorts of protected forests. Together they total 140 million ha. Group 3 consists of the industrial forests in which actual fellings take place. Most of the protected forests lie in the Central and Western parts of European USSR.

The average annual increment in the European part is 1.8 m³ per ha. The lowest increment 1 m³/ha is to be found in the coniferous area in the N.W. Russanow estimates the total Soviet increment at 840 million m³ annually of which 205 million m³ is in the European part. According to the management plan to be followed, the annual felling amount will be some 324 million m³.

In Soviet forestry, there is consequently no question of establishing a wood balance to estimate export possibilities, but mainly of studying the development of forestry, the extent of the wood industry and the total area of forest that is economically accessible under present circumstances.

Under the latest 7 year plan (1959—65), a broad expansion is planned for the wood industry. The slogan of the plan is »Erzielung eines maximalen Zeitgewinns im friedlichen ökonomischen Wettbewerb des Sozialismus mit dem Kapitalismus.» (IH 1959 No. 5 p. 22) The aim is to overtake the per capita production of the capitalistic countries. All branches of the wood industry are to be expanded. The total sawmill production, 6 million stds, in 1940, was doubled by 1953, and in 1960 it is expected to reach 20 million stds. It is intended to increase this production to 1.8 times its present extent. By 1965, it is planned to raise cellulose production to 4.8 million tons and the production of paper to 3.5 million tons. The increase as from 1958 will thus be 2.3 and 1.6 fold respectively. The production of certain items is expected to rise even faster. For example, cardboard is to increase four-fold during this period. Under the 7 year plan, the production of cardboard boxes in 1965 will be 20 times larger than it was in 1958. This will no doubt bring about an important saving of timber in the forms of wooden boxes. Altogether, the production increases mentioned above appear to create an extra demand for 50 million m³ of raw wood.

Plans include the founding of 25 new pulp and paper mills and the modernisa-

tion of some hundred older machines. The 24-hour capacity of the new newsprint machines will be 300 tons. The cooking volume of cellulose factories is also to be raised considerably.

All this expansion will require an investment of 58 000—60 000 million roubles. In view of the short time in which the expansion is to be carried through, it would seem impossible to increase raw-wood exports simultaneously. Since 1947 however, felling techniques have been mechanized enormously. The most usual procedure seems to be the clean felling of a single area at a time, which permits an extreme high degree of mechanization. This raised daily production from 0.85 m³ in 1940 to 1.15 m³ in 1958 (cf. Koroleff 1959) It has not however been possible to mechanize thinning fellings to any notable degree.

These new felling methods have cut down work at the stump to a minimum. The bulk of the work is now done in central areas near the loggers camps. It is apparently intended that units of this kind will produce 250 000 m³ annually and that the area will be worked for some 20 years. The degree of sylviculture is of little importance as the camp or village can be moved whenever needed. It has been calculated that 262 million ha are available for clean felling in such periods.

Such mechanization of forestry can produce astonishing felling amounts. In a totalitorian state such as the Soviet Union there are less difficulties of a social nature to be overcome and constant labour will be available. The main point is whether capital investments will be profitable. It is hard to draw a comparison with W. Europe, as only 4.7 % deductions are calculated on invested capital, but no interest.

The following table illustrates the progress of mechanization according to Bowles (1959 p. 215):

Table 53. Work done by machine in the Soviet Union as a percentage of all logging work.
Taulukko 53. Konetyön osuus prosentteina kaikesta hakkuutyöstä Neuvostoliitossa.

	1940	1950	1955
Felling — *Kaato*	—	38	86
Extraction from forest — *Kuljetus metsästä*	7	31	74
Transport to factory — *Kuljetus tehtaalle*	33	58	79

Bowles finds that productivity has not increased much despite mechanization. This is probably due to the sylvicultural work after felling in cleaning up the area cut. Furthermore too many operators seem to be employed in the machines; for example a man using a motorsaw has an assistant. Thus it seems that mechanization has developed a long way but that lack of co-ordination is keeping the tempo down. There is also much variation in the quality of labour. Only to 65 % the wages is proportional to production. Thus interest in production

is low and machines are not properly cared for. Last years export figures however indicate that these difficulties are being eliminated.

There has been some decentralization. Regional Economic Committees, working through timber agents, have taken over from the Ministry responsible for the raw-wood industry. It looks as if this part of the supply chain is working smoothly. There are also »self supplying firms», small decentralized works superintended by the local home industry. The costs of these firms seem to be 1 1/2 to 2 times higher than those of the larger works mentioned above.

It is interesting to look back at the figures for Russian exports of sawn goods during the present century. From 1900—1913 they increased from 640 000 to 1 145 000 stds. Between the first and second world war the following figures can be noted:

Year	1 000 stds
1923	230
1929	829
1935	1 105

At the end of the 1930's the Soviet Union joined the ETEC Agreement, resulting in a voluntary quota decrease. It is impossible therefore to estimate precisely how exports would have increased with »free trade». After the second world war, Soviet exports recommenced as late as the middle of 1950's. By 1957 they had risen to 736 000 stds and are estimated to altain 900 000 stds during 1960. Of this amount, it has been calculated that some 400 000 stds go to the U.K. About 1/3 of the total exports stay within the East bloc.

As building activity is extremely lively, it seems as if the increased production planned for the sawmill industry could be absorbed by home consumption especially as there are signs indicating that the intended expansion can hardly be completed within the time sheduled. Despite this, exports, as we saw above, have lately been increasing. Eklund (1957 p. 79) finds that »Mainituista tekijöistä huolimatta lienee mahdollista, että Neuvostoliitto ulkopoliittisten tai talouspoliittisten syiden vaatiessa voi jonakin vuonna tarjota vientiin esim. miljoona std sahatavaraa, soveliaaksi harkitsemillaan hinnoilla.» (*Despite the above, it can be possible that one year, if reasons of foreign or economic policy so dictate, the Soviet Union will be able to offer for export say 1 million stds of sawn goods at prices it may consider appropriate.*) The same conclusion can be drawn as regards raw-wood exports, which can be increased to practically any extent at the expense of home demand. Trade policy may be decisive if foreign currency is needed. Since the second world war, Exportles has however so far followed strict business principles, and endeavours to maintain a stable price level and avoid changes in the market situation. As is well known, this organization is empowered to decide on both prices and freights centrally.

Under the 5 year plan of 1956—60, 18 000 million roubles were set aside for

the development of fellings and floating. This amounts to 900 marks per m³ of cut timber. As the number of man-hours per m³ also seems to be rather larg in spite of mechanization we get the impression that production costs are high. As long as considerations of economy are respected, there should thus be no possibility of raw wood being dumped on the W. European market. Later, when the costs of this mechanization can be written off, the situation might change. It can be mentioned that according to EKLUND the stump price in 1956 was only 9 % of the cutting costs, which were 6.02 roubles/m³. Felling waste was estimated at 11 %.

Total fellings must be increased from 324 million m³ in 1958 to 372—378 million in 1965 if the raw-wood demand for the expanded industry is to be met. Of this part 275—280 million m³ should be industrial timber. The consumption of fuelwood is rather small as there are large quantities of coal, oil and peat available. Household fellings can be estimated at 20—30 million m³ annually.

In spite of the rich timber resources which call for no sylviculture at all, great interest is shown in the latter. HANDEL—MAZZETTI writes: (1959 b p. 3) »Es ist bekannt, dass die Russen schon immer gute Forstwirte waren . . .». Large areas are being cultivated at a time. A total of 11 million ha are to be regenerated. This however will not affects fellings during the present decade. There is not yet any interest in establishing timber balances, as the timber resources are found to allow for larger fellings than those at present practised. It is however considered natural to ensure regeneration of one sort or another. EKLUND estimates that fellings do not yet represent even half the annual growth, and that of the total forest area only one half is being used. The unused parts are those of the thinly populated inaccessible eastern and northern regions. Mass production seems to be the main target of present-day Russian forestry, without considerations of quality.

In conclusion we can note the following:

There can be no doubt that forest resources in the USSR would permit a raw-wood export several times larger than that of today.

The forestry mechanization is making it possible to increase cutting amounts in order to meet the rapidly growing home demand.

Only the question of costs militates against continued raw-wood exports, mechanization is expensive, and roads will have to be extended with larger cutting.

As regards the future of Soviet timber exports, the following statement by a Russian trade delegate is significant. »Wir wissen nicht wieviel es sein wird, jedenfalls aber soviel, wie der Markt verlangt.» (Holz-Kurier 1959 No. 19 p. 2).

Other export countries are of less interest, and only the following facts can be mentioned. Yugoslavia has 8 million ha of forest and can export about 5 million m³ of timber products annually, sawn or otherwise refined. Among the actual East bloc countries Poland has 7 million ha (23 %) forest but these are in such a poor

condition that export is not to be recommended until sylvicultural measures have begun to take effect. Czechoslovakia has 4 million ha of forest but in view of its high level of industrialization, only 2 million m³ wood products can be exported annually. The E. German forests cover 2.7 million ha, while Bulgaria and Rumania has 3.7 and 6.3 million ha forests respectively. As could be seen in the trade analys Rumania is maintaining some raw-wood exports to W. European countries although nothing of real importance.

4. Situation in the import countries

41. Development of demand for different kinds of raw wood

In view of the population density in the import countries, there can hardly be any significant change in their timber balances despite large-scale regeneration in progress or planned (cf. MANTEL 1959). No closer analysis of the timber balances of the import countries is therefore required. Instead we shall take a closer look at the development of the demand for different kinds of raw wood, and some interesting points in regard to their trade.

The timber demand is expected to grow during the 1960's owing to the increasing population, the higher living standard and technical development. But it is not possible accurately to estimate the development of timber trade even during the next few years. As an example how difficult this can be, we can quote DIAMANT (1936 p. 36) who in his treatise on German paper imports wrote the following: »so dass Finnland für die fernere Zukunft gesehen, kaum in die Reihe der Papier holz-Überschusstaaten eingereiht werden kann.» As we know, the Finnish pulpwood exports are continuing more strongly than ever.

The theoretical increase in consumption is still practically unlimited. We need only take the annual per-capita consumption of 200 kg paper in the USA and calculate a corresponding world consumption on this basis. The figures arrived at are astronomical. All writers concerned with the problem of future demand for wood seem to agree that there will be a scarcity of industrial timber for pulp manufacturing (Cf. FAO 1948, the Paley-report 1951, FAO-ECE 1953, STREYFFERT 1957, etc.). To illustrate this development it can be mentioned that world pulp production in 1956 was 6 times greater than in 1913; between 1947 and 1956 alone it doubled. At the FAO conference in Montreal, 1949, the annual increase in the demand for pulp was estimated at 4.5 %; the actual increase in production and demand proved to be 7 % annually. Other FAO investigators estimated that the consumption of mechanical pulp and cellulose would increase from 37 million tons in 1950—52 to 50.5 million tons in 1960—62; but consumption had already reached 50 million tons by 1956. This meant an annual production increase of 6.6 %, as against the 3.1 % estimated. According to the latest FAO forecast (FAO/WPPC 1959/2, 1959/27) world paper production is calculated to rise 6.5 % annually, thus pushing world consumption up to 134 million tons in 1975. This forecast has also been confirmed by parallel investigations. Consumption in 1958 was 62 million tons.

The capacity of the pulp industry is estimated to grow to 74 million tons, and that of the paper industry to 90 million tons in 1965. The share of W. Europe will be 21 million in 1965 and will increase to 27 million tons in 1975, involving an increase in demand of 31.5 million m³ for pulpwood annually. FAO finds that until 1965 demand and expansion will proceed evenly, but from 1970 onwards there will be a shortage of pulpwood. It is interesting to note that the world consumption of paper goods now is so enormous, that expansion in one country will hardly affect the total world balance.

Even if we estimate a conservative consumption increase of 4 %, the world pulp demand will amount to 100 million tons in 1973. To cover such an increase raw-wood production must rise from 210 million m³ to 400 million m³ or more. The main increase must take place in Europe and N. America.

To what extent the demand for other timber products will grow is not, however, certain. FAO (1958 p. 77) finds that: »Europe's hardwood consumption has increased substantially in total, though only moderately per head of population; this in direct contrast to softwood consumption, which has been falling off per capita since 1913».

It seems as if the use of sawn goods will only grow slowly despite the population increase, the higher standard of housing and rising industrial production (cf. Ronge 1957 p. 243). SPEER (1960 b p. 5) writes: »Die Schätzungen schwanken für Europa zwischen einer durchschnittlichen jährlichen Zunahme von 0.7 % und im Optimalfall 3.3 %.» The production of timber is also falling as compared with the total national production. »Die Holzproduktion und Holzverarbeitung sind also im Begriff an relativer Bedeutung zu verlieren.» (SPEER 1960 b p. 5). This is borne out by the fact that since 1948 the per-capita consumption of sawn goods has gone down from 0.607 m³ to 0.496 in Canada, and from 0.458 m³ to 0.418 m³ in the USA.

No greater changes are to be expected in the European sawmill industry as the import countries are used to importing sawn goods and have not attempted to develop industries of their own. Sawmills in the import countries mostly handle imported material or else are purely domestic affairs.

There is no reason for special economy in the consumption of timber products now that post-war production difficulties have been overcome. FRIEDRICH, (1960 p. 12) for example, writes: »Von Holzmangel und von der Notwendigkeit Holz einzusparen, kann heute nicht mehr die Rede sein.» The primary factors influencing the volume of consumption are progress in sylviculture, free trade, better technical utilization, the use of surrogate products, and above all, the price development of timber as compared with that of other products. Sharp price fluctuations usually have a negative effect upon consumption. There are signs that the use of timber is becoming »modern» and fashionable. Articles in the trade journals inform us timber is finding new fields of use and there has been a renascence especially in the building trade (cf. TTJ 1960 No. 4362 p. 61 and

IH 1959 No. 9 p.1 etc.). High-pressure impregnation of timber for building which renders it fireproof is contributing to this. Such technical innovations as the gamma-radiation of timber, converting close fibre into loose fibre wood, are also noteworthy. Furthermore, it should be possible to influence demand by means of modern publicity methods such as fairs and exhibitions, etc. (cf. ERVASTI 1960).

Such is a brief general survey. Further separate analysis of the different kinds of raw wood indicates the following.

As already noted, the demand for pulpwood is expected to rise sharply. How this will affect the pulpwood trade mainly depends on whether industrial expansion in the import countries will be based upon increased home fellings or increased import or both, and if the latter, in what proportion. To throw light on this question, material has been compiled overleaf on felling and imports of pulpwood during the 1950's in the most important import countries, as compared with the production of pulp.

W. German pulp production grew 37 % between 1950—54 and 1955—59. Home fellings of pulpwood rose by 77 % and imports by 79 %. Expansion of production seems thus to be based slightly more upon an import increase. In the U.K. the home production of pulp is unimportant; both production and imports stayed within narrow limits. There is only a 15 % increase in the production, but despite this, the home fellings rose by 134 % between the first and last halves of the decade. This is probably due to the utilization of timber classified as pulpwood for other purposes. French pulp production has gone up 51 %. Both fellings and the imports, however, show a rising trend, the former by 72 %, the latter by 107 %. Italian imports increased by 65 %, but pulpwood fellings by only 36 %.

As far as we can judge from this material, the increase of pulp production during the 1950's in W. Germany, France and Italy was in rising quantities based upon the import of raw material.

As the sawmill industry is more or less static, no increase in the coniferous log demand can be expected. Nor is the internal European trade in broadleaved logs expected to increase. On the other hand, the demand for precious woods from the tropics for joinery and the building trade has not yet reached a peak. Such imports will probably become easier in the future, as the most important import countries will permit duty-free imports under the EEC agreement.

Wooden sleepers will be faced with ever-growing competition from steel and concrete. This development has gone furthest in W. Germany, where only half the number of rails lies on wooden sleepers. In other countries, especially in N. Europe, wooden sleepers are in the majority. In Sweden, for example, the proportion is 95 % to 5 %. An FAO investigation showed that in nine W. European countries 81 % of all rails are laid with wooden sleepers, 17.5 % with steel and 1.5 % with concrete. In 1954 the percentage for wooden sleepers was 87 %, so

Table 54. Fellings and trade in pulpwood in some countries against pulp production 1950—59.
Taulukko 54. Paperipuun hakkuut ja kauppa eräissä maissa verrattuina puuvanukkeen tuotantoon vv. 1950—59.

Year *Vuosi*	Fellings *Hakkuut* *1 000 m³*	Imports *Tuonti* *1 000 m³*	Exports *Vienti* *1 000 m³*	Pulp production *Puuvanukkeen tuotanto* *1 000 tons*
		W. Germany		
1950	1 670	638	133	905
1951	1 657	1 253	13	997
1952	2 057	1 186	8	901
1953	1 156	822	15	1 035
1954	1 416	1 457	—	1 192
1955	1 558	2 285	1	1 311
1956	1 562	2 227	95	1 372
1957	3 650	1 758	159	1 416
1958	3 587	1 581	5	1 377
1959	3 709	1 744	39	1 427
		United Kingdom		
1950	65	238	—	130
1951	116	313	—	144
1952	115	464	—	148
1953	145	291	—	123
1954	140	363	—	143
1955	146	364	—	135
1956	150	352	—	140
1957*	215	376	—	138
1958	393	239	—	141
1959	453	307	—	240
		France		
1950	1 101	161	22	496
1951	1 450	523	17	550
1952	1 276	571	3	475
1953	1 068	262	5	533
1954	1 628	347	3	617
1955	1 970	657	6	674
1956	2 207	885	137	736
1957	2 325	840	136	802
1958	2 440	704	116	829
1959	2 300	770	367	1 003
		Italy		
1950	419	355	—	259
1951	536	434	—	304
1952	511	658	—	277
1953	537	447	—	266
1954	574	822	—	294
1955	722	740	—	328
1956	732	961	—	356
1957	655	965	—	384
1958	674	875	—	369
1959	733	935	—	433

that during this time, concrete has gained by 6 % mainly in France and W. Germany. Pine sleepers have to be renewed after 8 years if they are unimpregnated, but impregnated sleepers can be used for 25—30 years. In view of the high cost of concrete sleepers, these must have a useful life of 50 years if they are to be competitive. In the future, when more all-welded unjointed rails are used, concrete sleepers will be more favoured owing to their weight. On the other hand, concrete makes for less smooth running, owing to its lack of give. To remedy this, rubber sheeting is sometimes laid between the sleepers and the rail.

Steel sleepers have the drawbacks of splitting at the rivets and corroding. Furthermore they too easily conduct electricity, with an adverse effect on the electric signalling system. Evidently concrete is the more dangerous competitor especially because, as an experiment, rails have been laid on long slabs of concrete running in the same direction instead of on sleepers proper. It seems, however, that concrete does not stand up to very cold winters, which limits its use. The advantages of wooden sleepers can be summarized as follows:

1. High elasticity and resistance to blows making for smooth running.
2. Firm contact with ballast even in poor ground conditions.
3. The rails do not buckle and warp when big changes in temperature occur.
4. The low weight of wood keeps the price of transport, laying and repairs down.
5. The electric signalling system works better.
6. Easy repairing and handling, when required.

As the European railway network is more or less complete, no real increase in the demand for sleepers can be expected. Wooden sleepers, however, seem to be doing quite well in competition with other materials, so consumption should maintain its present level. KMONITZEK writes (1960 b p. 660): »Die Holzschwelle und insbesondere die Buchenschwelle ist bei der Preisgestaltung in den Forstwirtschaftsjahren 1959 und 1960 und dank ihrer langen Liegedauer gegenüber der Betonschwelle absolut konkurrenzfähig.»

According to an investigation made by the International Railway Union, the European demand for sleepers in 1963 is expected to be as follows (cf. Trävaruindustrien 1960 p. 131):

	Million pieces
Broadleaved	12.3
Coniferous	8.0
Steel	0.1
Concrete	5.7

The situation in regard to pitprops is much less hopeful. The use of timber in mines has been steadily decreasing during recent decades. In 1945 36 m³ of pitprops were needed per 1 000 tons of coal. Today the demand is only 18 m³. The mine tunnels in the U.K. are now to $^2/_3$ supported by steel props and only

$^1/_4$ by wooden pitprops — and this despite the ability especially of coniferous timber to give warning of eventual slides. However, wooden pitprops do rot very quickly in mines, where it is often damp.

With coal production also falling off it is easy to understand why the demand for pitprops has reached its peak and will continue to decrease. Also HOLOPAINEN (1952 p. 13) found: »Että Britannian kaivospuun tuonnin pääsuunta on edelleenkin aleneva.» (*That the main feature of British pitprop imports is that they continue to drop.*) As regards the British market it can also be noted that the thinning of young, home-grown forests as part of the sylvicultural programme is at present helping to satisfy the demand. The same trend in the pitprop trade can be observed on the continent.

As we saw in the analysis of the export and import figures during the 1950's, decreasing consumption has not yet affected total trade. This was because W. Germany did not start importing pitprops on a large-scale until the 1950's. During the present decade there is nothing to prevent the general decrease in consumption from influencing the trade volume.

As regards poles, piling and posts it should be remembered that telegraph and other poles can be replaced by steel and concrete structures or else cables can be sunk into the ground. On the other hand, technical progress is leading to a larger demand. The demand for harbour constructions and canals seems also to be growing. No decrease in the demand and trade for this raw-wood category need be expected.

As has often been noted before, the need for fuelwood is in inverse proportion to the general welfare of the population, which results in oil heating and better heating economy automatically decreasing the demand for fuelwood. This is also affected by the movement from the country to the towns. These trends are much too powerful to be counteracted by the demand created by the rising population. Thus no increase in the European fuelwood trade is to be expected. It is another matter that pulpwood purchases can be disguised as fuelwood purchases for politico-economical or other reasons.

42. General views.

A brief survey of the situation in some of the larger importing countries follows.

Of all these countries, W. Germany has the most important forest resources of her own. When the country was undivided, equilibrium could be maintained in the timber balance with the help of E. Prussia and Silesia. In 1920 Germany even had a positive timber balance of 0.9 million m³. The situation within its present boundaries calls for large-scale imports. The last time the forests were surveyed was in 1948 and a new survey is under way at present. Evidently there

was heavy over-felling for several years after the war. W. Germany's forest area is estimated at 7 million ha or 28.6 % of the total area, but amounting to only 0.15 ha per capita. Growing stock was estimated to be 625 million m³ in 1956. Of the forest area 31 % is owned by the State, 42 % by private individuals and the rest by public institutions. 95 % of all private forests are attached to farms. In W. Germany, too, there are large numbers of small forest units. Of a total 700 000 it is reckoned that 450 000 have less than 2 ha forest. This is without doubt holding back rationalization.

Post-war over-felling, which sometimes rose to 240 % of normal, was stopped from 1947 onwards. Fellings have gone back to normal since about 1951. The condition of the forests, 69 % of which are coniferous, can be considered good in spite of the war and the consequent fellings. The increment is estimated at 25 million m³ annually but the aim is to keep fellings down to 23 million m³ so as to remedy the over-fellings mentioned above. KLOSE (1959 p. 331) here states that »Der deutsche Holzanfall ... wird auch in Zukunft einen jährlichen Einschlag von rund 23 Mio fm o.R. nicht viel überschreiten» .

In the past 10 years 800 000 ha have been regenerated, but this, naturally enough, will not affect fellings for 25—30 years, after which time pulpwood fellings can be increased by about 300 000 m³.

According to MANN (1960), with home-fellings at 23 million m³, to maintain the timber balance means importing 10 million m³ of industrial timber annually. Of these imports 1.5 million m³ consist of broadleaved wood. These are not difficult to satisfy as 60 % comes from the EEC countries. W. German fellings of broadleaved timber (3 million m³) could be raised without any fear for her rich reserves of beech. Of the total forest area, 20 % is covered by red beech. At the moment there seems to be keen competition from tropical timbers, resulting in lower prices for home-grown broadleaved species.

Coniferous imports seem to be in a much less stable situation. Post-war reconstruction is almost complete, so the demand for building materials can be expected to fall. By the end of the 1950's 5—600 000 dwellings had been built annually with State grants, but from 1963 onwards it is estimated that only 200 000 dwellings are to be built and these will furthermore be dependent on private investments. The demand for coniferous logs for the sawmill industry also appears to be on the decrease, the reason being that the sawmills are bearing too heavy a burden of taxation. With a turnover tax on every phase of production, the sawmilling industry attempt, to integrate as much as possible. Instead, imports of ready sawn goods are increasing.

All other branches of the wood industry can expect an increased demand for raw material. Plywood production, for instance, needs 900 000 m³ annually, 60 % of which is imported. Since 1951 the use of home-grown beech for making plywood has diminished in favour of imported timber. Birch is considered to give better qualities, but it is cheaper to manufacture plywood from beech.

The wallboard industry is completely based upon home-grown raw material, of which ¾ is waste. Only 135 000 m³ of actual raw wood is used annually. The particle board industry requires much more material; production has grown twelve-fold during the last eight years. Even though this branch is the youngest of the wood industries it nowadays uses 600 000 m³ annually. The same amount is used for manufacturing surface veneer, where a strong tendency in favour of tropical timbers can be noted, so that 80 % of the timber required is imported.

The utilization of waste wood has developed very considerably during recent years. In 1959 consumption was distributed as follows, in 1 000 m³:

Fibreboard industry	350
Particle board industry	450
Cellulose industry	360
Total	1 160

During the last two years consumption has risen by 300 000 m³.

Fuelwood fellings are estimated at 5 million m³. On account of the general tendency to consume less fuelwood as time goes on, this quantity should offer a rather large reserve to be used later by the cellulose industry.

A peculiarity of the W. German paper industry is the fact that there is not a single sulphate factory. This is partly because pine stands cover only 27 % of the entire forest area (spruce 42 %). Before the armistice, East Prussia and Silesia were important suppliers of pitprops for the Ruhr. At present, W. German pine stands are not sufficient despite no sulphate pulp being produced. On the other hand, the use of spruce for pitprops must be considered wasteful as this wood is needed for sulphite pulp. Evidently the import of pitprops, which has been some 1 million m³, will continue, subject to the general falling trend we have already noted in previous chapters.

The pulpwood demand is entirely concentrated on spruce and amounts to over 3 million m³ annually, of which quantity some 1 ½ million m³ has to be imported. The shortage of coniferous timber is thus mostly felt in the supply of pitprops and pulpwood. If the imports ever have to be cut down, W. Germany can remedy the situation to some extent by manufacturing beechpulp and by growing poplar, but these sources can hardly supply more than about 1 million m³. The W. German paper industry seems to be ready to abandon the expansion of the pulp industry and in future rely on imports not only of sulphate cellulose as up to now, but also of sulphite cellulose (cf. Mann 1960).

France has a large forest area of 11.5 million ha, but the growing stock consists of 69.5 % of broadleaved timber and 30.5 % of coniferous, that is more or less the inverse of W. Germany. The most usual broadleaved species is oak, which covers 35 % of the forest area. The total increment is estimated at 32.5 million m³ annually, with an extra 3.6 million m³ in areas outside the actual

forests. Of the forest area 65 % is privately owned. The number of units is large: 1.4 million forest owners own less than 10 ha each. Most of these need their own timber. Sylviculture in the private forests seems to be rather primitive. Rotation periods are long and no management plans are followed. As a result, thick-dimensioned categories are typical. The production of the middle and low forests is still to a large extent used as fuelwood. The long rotations do not encourage the production of pulpwood, which is mainly obtained from the thinning of younger standings. Thus only a small part of the felling from the French forests is suitable for the pulp industry. The largest forest areas are situated in the Eastern and North-Eastern parts of France (Vosges and Jure).

The French paper industry is highly developed and annually requires over 5 million m³ of pulpwood. 2 million m³ is extracted from French forests, the rest is imported in a more or less refined form. The number of sawmills has also been trebled since 1914, and the theoretical sawing capacity is estimated to be six times larger than can be met by home-grown resources. The total felling statistics are rather doubtful, owing to the large demand for fuelwood which can only be estimated approximately. According to the statistics, fellings were as follows in 1 000 m³:

	1955	1959
Broadleaved logs	4 350	16 000
Coniferous logs	5 550	
Pitprops	2 150	5 400
Pulpwood	1 600	
Fuelwood	25 000	18 000
Total	38 650	39 400

This indicates a certain overcutting compared with increment, which is however understandable in view of the state of the forests.

For a long time, France has dogmatically held to the opinion that there is a shortage of coniferous timber, and therefore all exports should be prohibited. On the other hand, the surplus of broadleaved wood would permit free export of large quantities. Lately, however, a new tendency has been noted: the felling of coniferous wood was raised from 7 million m³ in 1950 to 11 million m³ in 1959. This is considered to be due to the results of sylviculture carried out at the beginning of the century. Large areas in S. France (Cascogne) have been planted with Pinus pinaster which has increased the coniferous area by 1 million ha. Fellings of broadleaved timber have also doubled within 30 years. This has slowly led to a liberalisation of the timber exports, a matter we will consider in a later chapter.

In France, too, the use of broadleaved wood for paper-making has been developed. The demand for broadleaved pulpwood rose 35-fold between the years 1936 and 1958. A factory for the production of broadleaved cellulose with

a capacity of 50 000 tons was built near Tolouse in 1959. It is calculated that within a few years imports of coniferous wood will fall belove the production of homegrown broadleaved timber — a development which is being encouraged by the decreasing demand for pitprops and fuelwood. In the supply of fuel, especially, there has been a complete revolution due to the growth of oil and gas heating. In this way France hopes to become less dependent on countries outside EEC.

At the beginning of the century, only 4 % of the U.K.'s timber demand was covered by the country's own forests. War further deplenished British forests. Today there are 1.1 million ha of private forests and 0.5 million ha of productive State forests. A constructive forestry policy has taken root since the second world war. According to the programme elaborated by the Forestry Commission in 1943 a target of 2 million ha of productive forests has been set. The Commission considers that fellings from this should cover a third of the country's annual demand during normal times, and the whole demand for about five years in an emergency. The Forestry Act of 1951 furthermore stipulates the establishment of a growing stock to ensure and maintain a steady supply of timber. These plans are to be completed within 50 years.

On enquiring how they have succeeded during their first 10 years, it is found that of the 1.2 million ha of regenerated forest planned, only 500 000 ha have been completed. The Forestry Commission has shown the poorest results: only 27 % completed of 750 000 ha planned. This is largely because the Commission has not been able to buy enough land at the rather low average prices allowed under the plan. In the U.K., as in all big importing countries, forestry investments must be fully competitive with other investment projects. The situation is different from that in the big export countries where the forest area cannot be used for anything else but timber production.

Since 1 January 1950 the Forestry Commission has been controlling fellings in all forests, in accordance with the plans mentioned above. The felling of industrial timber is thus obligatory for all forest owners, except a small quota allowed for their own use. The Commission can stipulate felling amounts either to fill timber quotas or on sylvicultural grounds. The Home-grown Timber Advisory Committee supervises the actions of the Commission, and private owners can receive compensation from the State for losses caused by compulsory fellings. It is evident that these controls make it impossible to vary felling quantities as much as those in the export countries.

The foremost aim of the State forests is new planting. Improving and utilizing older standings takes second place. There are no actual management plans for forests in the U.K. They have even been considered old-fashioned. Thus no co-ordination of the aims of such plans has been possible. Recently there has been a certain modification of opinions in this respect.

As is shown by the latest statistics, the situation in the Netherlands is quite hopeless. The forest area is only 260 000 ha — 7.2 % of the total area. The

forest area per capita is 0.023 ha. Private forests, which cover 61.9 %, are scattered and hard to manage systematically. Of the total forest area, 73.8 % is coniferous, 15 % broadleaved and the rest bush. There is a home production of about 750 000 m³ annually, but the demand amounts to 5.3 million m³. Only 15 % is thus available from home fellings, and this is mainly used by the populace as fuelwood and to make poles and wooden shoes. Of the pitprop demand $^2/_3$ is also satisfied by home fellings. The demand is divided as follows, in million m³:

Building timber	2.0
Pulp industry	1.3
Packing	0.4
Pitprops	0.2
Sleepers	0.1
Fuelwood	0.1
Total	4.1

The Netherland's imports from the EEC countries account for only 8 % of her total raw-wood imports.

Italy nowadays manufactures 160 000 tons of broadleaved pulp annually from quick-growing eucalyptus and willow species. Likewise a certain change in the sawmill industry has taken place, with the result that many mills base their production entirely on imported raw wood. The raw-wood import of coniferous logs for sawing purposes was as follows in 1958 in 1 000 m³:

France	74.3
USSR	71.0
Czechoslovakia	53.4
Finland	12.8
Switzerland	11.8
Total	223.3

Russian imports, in particular, have increased. »Die Konkurrenz der Ostländer gewinnt auf dem italienischen Markt immer mehr an Bedeutung» (Holz-Kurier 1959 No. 19 p. 3). A new sawmill has been established in N. Italy, using only Russian raw materials. Raw-wood imports arrive via Trieste. On the whole, the imports of ready-sawn goods also seem to be growing, and thus forcing down the prices of home-grown timber.

The total imports have been as follows, in 1 000 m³:

	1957	1958	1959
Coniferous logs	179.2	381.3	414.6
Broadleaved logs	305.3	377.8	531.4
Total	484.5	759.1	945.0

The broadleaved timber imports are almost entirely confined to tropical species. The home fellings of coniferous wood showed a steady decrease during the entire 1950's (from 2 million m³ to 1.2 million m³). The broadleaved fellings have maintained a fairly stable level at ca. 2 million m³.

All the importing countries seem to be planning large-scale forestry programmes (cf. SCHEIFELE 1960 p. 828). Italy also plans to increase her forest area by 332 000 ha within 10 years. This far south, plantings are partly of quick-growing species which are expected to increase industrial timber resources fairly rapidly.

On comparing fuelwood consumption, it is found that in Italy 70 %, in France 50 % and in W. Germany 25 % of the fellings go to satisfy this demand. Thus it will be most difficult for W. Germany to increase her production of industrial timber. On the other hand, progress in the utilization of broadleaved wood is increasingly raising the effective timber reserves of France, Italy and Belgium.

There is also a lively forest planning in the East bloc. Hungary, which has the biggest negative wood-economic balance there, is planning new cultivations of 740 000 ha within 20 years. This will raise the forest area of the country to 1 865 000 ha, i.e. 20.3 % of the total area, and is estimated to increase felling prospects by 1 million m³ annually.

Investigations have shown that agriculture has taken over areas not at all suited to this purpose. At a time when the rural population is moving to the cities, such areas should evidently be replanted with forests.

In the case of industrial expansions in import countries, several investigations have proved that costs can be reduced by increasing production. For example FAO (1955 p. 194) produced the following figures on the production of newsprint in N. America:

Capacity Tons annually	Capital costs $ per ton	Indirect costs $ per ton	Fixed cos s $ per ton	Total $ per ton
35 000	71.00	28.00	45.00	144.00
70 000	56.00	25.00	45.00	126.60
105 000	49.00	23.00	45.00	117.00
140 000	44.00	21.50	45.00	110.50
175 000	41.00	20.00	45.00	106.00

Nowadays 100 000 tons are considered a minimum for a paying production. Most new industries aim at a production of 300 000 tons annually. For comparison, it can be noted that the average production capacity of Finnish cellulose factories in 1928 was 27 700 tons and in 1959 84 500 tons.

Furthermore, modern industries are striving for complete integration, refining all by-products to the utmost of their capacity and using up waste in numerous different ways. In the import countries the possibility of adopting such cost-

saving rationalization is very slight, mainly because importation seldom permits sufficiently large industries.

Further, the question of water hampers the establishment of large factories. There are no water ways to carry pollution away from factories on the continent (cf. STEENBERG 1960 p. 204). On the other hand, the use of wood waste has increased in the import countries due to the rapid expansion of the particle board industry. Between 1955 and 1957 alone, production in W. Europe increased from 290 000 to 485 000 tons.

All this will naturally improve timber balances in the import countries. Nevertheless, the wood production increase seems to be only large enough to balance the rise in population. The rate of the population increase in Europe between 1955—70 is estimated at 6 %. There are, however, also voices warning of an unfavourable development. KLOSE (1959) for example, finds that the situation can become dangerous due to falls in consumption and increases in fellings. But we are of the opinion that the factors favouring a continuous import demand — and even an increase in demand for certain articles — are more powerful (cf. MANTEL 1959).

In the next chapter we will study the possible effect of new trade-political factors on the raw-wood trade.

5. The new trade-political trends in Europe

51. Co-operation since the second world war

»Med handelspolitik förstår man i allmänhet åtgärder, som myndigheterna i ett land vidtager i syfte att förbättra näringslivets avsättningsvillkor i utlandet och att tillförsäkra landet en fördelaktig varuförsörjning utifrån.» (*By trade policy is in general understood those measures taken by the authorities of a country with a view to improving sales abroad of industrial products, and ensure that the country obtains goods advantageously from abroad.*) (SOU 1957 p. 100). It is very difficult strictly to differentiate between trade policy and other forms of economic policy. In general, measures taken to assist export such as credits and subsidies are considered to be trade policy although they are more in the nature of a support of internal trade conditions. Customs and the quantitive restrictions are means of assistance clearly allied to trade policy, though these can be used in the internal economic policy too. A typical feature of trade policy, however, is that it tries to influence »varuutbytet med utlandet för närmare angivna varugrupper och i förhållande till bestämda länder.» (*The exchange of goods with countries abroad for more specific groups of goods and in relation to definite countries.*) (SOU 1957 p. 100).

In practice, trade policy works by negotiations and agreements with other countries. Such agreements can be either bilateral or global. After the slump at the beginning of the 1930's, trade policy took the form of higher customs duties and more complicated restrictions. This trend became more severe with the second world war and wartime shortages. On the whole the period between the end of the war and the 1950's was characterized by bilateral agreements and an extensive imposition of quantity restrictions. In the case of Finland bilateral agreements were predominant up to 1955.

However, repeated efforts were made to pull down the high trade barriers, especially those surrounding European countries, and slowly global co-operation within international organizations developed. The fact that both the USA and the Soviet Union were overtaking Europe made co-operation essential. Thus important results have already been achieved. To obtain a better idea of how this will effect the raw-wood trade, a short study will be made of the most important organizations.

The general Tariff and Trade Agreement, now known as GATT, was founded in 1946 on UN initiative. This agreement is a contract with strictly defined obligations on its members. »Handelsreglerna i Gatt-avtalet ger organisationen prägeln av ett . . . världsomfattande forum för diskussion av speciella handelsproblem och för koordinering av de enskilda medlemsländernas handelspolitik.» (*The trade rules in the Gatt-agreement give the organisation a stamp of . . . a worldwide forum for the discussion of special trade problems and for the co-ordination of the separate trade policies of the member countries.*) (HORTLING 1958 p. 86). Through its many tariff negotiations GATT has succeeded in maintaining some 60 000 mutual tariffs between its members, at their present level or even reducing them. GATT also militates against all other trade restrictions. In accordance with Article 24, GATT promotes continued expansion of the trade by permitting customs unions and free trade areas. As mentioned earlier in the market survey this has already led to the founding of two common markets, the European Economic Community, EEC for short, and the European Free Trade Association, known as EFTA.

In addition to these organizations, the Organization for European Economic Co-operation (OEEC) had already been founded in 1948, and it at present includes all European countries except Finland and Jugoslavia. In July, 1960, this organization was reorganized as the OECD, comprising 19 European countries plus the USA and Canada. The organization is to start its work in September 1961. Finland is still outside this new organization.

In 1952 the Monta Union was founded as a precursor of EEC. Through this Union the joint coal and steel production of six European countries was organized to cover a common market. We can also mention EZU (Europäische Zahlungsunion), which was dissolved in 1958 as being redundant after the European countries had initiated the free convertability of currency. On the other hand, the Europäisches Wirtschafts-Abkommen of 1953 is now in force.

Of all these organizations there can be no doubt that EEC and EFTA will have the greatest effect on the raw-wood trade.

To begin with, there were long negotiations for the establishment of a free trade zone comprising 17 of the OEEC countries. This project fell through. The Nordic countries have also held serious negotiations for a customs union, but such a union was considered unsuitable after EFTA had been founded.

52. The European Economic Community

EEC comprises W. Germany, France, Italy and the Benelux-countries, the Netherlands, Belgium and Luxembourg. These countries have agreed to form a customs union which during a period of 12—15 years, will endeavour to eliminate all customs and import restrictions between the member countries.

It came into force on 1 January 1958, and the first customs reductions were carried out one year later. Within EEC, the Benelux countries have founded another customs compact of their own, permitting each other higher preferences during the transit period than those allowed for Germany, France and Italy. The aims of EEC are:

1. To abolish customs and restrictions and thus create free trade between the countries.
2. To fix mutual external customs tariffs.
3. To establish a mutual economic policy.
4. To abolish all obstacles to the free circulation of persons, services and currency.
5. To establish a mutual farming and transport policy.
6. To co-ordinate economic policy so as to avoid difficulties in the balance of payments.
7. To alter their laws if necessary.
8. To found a European social fund.
9. To found a European Bank for investments.

Every year on 1 January the original customs tariffs are decreased 10 %. This advantage is to be granted to all OEEC countries, at least in the case of raw-materials and semi-refined products.

It is also intended to abolish import and export restrictions within 10 years, the procedure being as follows:

Bilateral quotas are gradually to become global (within EEC) and to be expanded step by step. By the end of the first four years all export restrictions and such like are to be abolished. By the 10th year the import quotas must be 20 % of home-production. The view is that this will be tantamount to complete free trade. Subsidies, export bonuses etc. will naturally be forbidden.

The agreement between these 6 countries aims at complete economic integration with free exchange of money, labour and so forth. Thus it has rather a strong political flavour. (Cf. KARA 1960 p. 161, AARNIO 1958 p. 186, and others). The development seems to have been accelerating recently, along with an increasing realisation of EEC's power. The customs union embraces 170 million inhabitants of Europe and 52 million in other parts of the world.

According to point 2, above, the customs union is to fix mutual customs tariffs to apply to all countries outside EEC. These tariffs are to be based mainly upon arithmetical averages of the tariffs that were in force on 1 January 1957. According to GATT, the new tariffs must not exceed the tariffs replaced. The members of EEC have already agreed on their mutual customs duties on wood products. The final decision, however, will be made after negotiations with GATT have been concluded. As a result of these negotiations the customs duties could still be abolished if the corresponding customs preferences in the third countries were also abandoned. The first step towards mutual tariffs will be made on 1 January 1962, when the first of the three transition phases ends.

EEC has had a foretaste of how the agreement will work out in practice.

Two tariff reductions have already been effected, and twice import quotas increased. At the end of 1960 the tariff reductions will thus amount to at least 25 % and the import quota increases to at least 40 %. In practice, it seems that these figures will be exceeded as a still faster development is being aimed at than was originally planned. It is surprising to note that the economic questions within EEC seem to be the easiest to settle. Or as PETRELLI has put it: »EEC has become a paradise for lawyers, a purgatory for economists and a hell for politicians». In particular, the question of trading in agricultural products between EEC and other GATT countries has created difficulties. However, there seems to be no reason to fear that the less developed countries within EEC would suffer. Italian industrial production, for instance, rose by 9 % in 1959, while the average for the EEC countries was 5.5 %.

To start with, the EEC countries considered timber an agricultural product, but during 1959 the opinion that it should be considered an industrial product gained ground. When the EEC agreement was first made, the existence of forestry seems to have been more or less ignored. It was lumped together with agriculture in Article 38: »Unter lantwirtschaftlichen Erzeugnissen sind die Erzeugnissen des Bodens, der Viehzucht und der Fischeri sowie die mit diesen in unmittelbarem Zusammenhang stehenden Erzeugnisse der ersten Verarbeitungsstufe zu verstehen. »After its first process of refinement, timber is no lónger considered to be agricultural. No doubt it should be considered a product of the earth. All the same, it has not been included in the list of goods in Article 38 and no mutual forest policy has been defined in the agreement. Later the subject has received more attention, and an addendum has been made to Article 43, in which the mutual composition and expansion of agricultural policy is defined. Wood is included in certain items added to the agreement. It appears mainly in List G, comprising the goods to be handled under external customs.

As wood was not included in List II, no efforts are to be made to enforce a mutual timber market. It would have been possible to add raw wood to this list before 1 January 1960, but this was not done. This is probably because all the EEC countries are large importers, and have no special interest in a mutual timber market. For example MANTEL (1958 b p. 650) finds that no complete wood marketing control (Holzmarktreglung) is current within EEC. KLOSE (1959 p. 332), too, writes: »Die Erfahrung von Holzumlagen und Preisbindungen, die in der Bundesrepublik in den vergangenen Jahren gemacht wurden, sind keine günstigen.»

At a conference in Brussels in 1959, the EEC members discussed their forestry interests for the first time, but with meagre results. (Cf. Allgemeine Forstzeitschrift 1959 p. 508). The fundamentals of the following programme were however agreed upon. All 6 countries should follow a common forestry policy, partly because fellings often extend over national boundaries and partly because half the forest units are connected to farms. The programme also contains

general ideas on sylviculture, on the founding of larger forest units, on halting any further splitting-up of units, etc. Each country is to strive for these aims separately. In the section on joint agricultural policy also, it is stated that forestry must be linked together with the policy on agricultural structure.

The Brussels conference suggested the founding of a forestry headquarter and the setting up of a permanent commission. But up to now, nothing has been finally decided. Such an arrangement would supply the EEC countries with necessary forestry material. It should not be forgotten, however, that the European Committee of FAO and the European Council also handle these questions, which may result in unnecessary duplication.

The Brussel conference found that forestry, since it concerned the land, formed part of agriculture but that timber as a raw-material should economically and politically be regarded as the industrial raw-materials. In this respect, full agreement was not reached as W. Germany's opinion differed. In any case timber is one of the items on list G, and can only receive political trade protection within the sphere of existing regulations on industrial goods. Thus this should lead to freedom from customs and quotas in the near future. OEDEKOVEN (1959) considers it probable that a free timber market can be achieved within EEC in 4—6 years's time. Evidently the six countries will continue with their own forestry even if their problems can and should be discussed by the Forestry Commission. This should avoid a lot of red tape.

Under the GATT agreement the founding of a customs union of the EEC type must not lead to a decrease in trade with other GATT countries. How this will be avoided remains to be seen. It is significant that trade between the Benelux countries has been trebled since 1948, when the customs union between them was founded. (Cf. AARNIO 1958, p. 175). However, there are signs of continued European co-operation. For example, EEC has decided to grant all GATT countries the advantages of the first tariff reductions in 1959. There have also been negotiations between EEC and EFTA on the possibility of co-operation, though these have not yet led to any concrete results. About this, Internationaler Holzmarkt (1959 No. 17/18 p. 19) writes: »Da der EWG nicht mehr sieben Einzelstaaten, sondern nur mehr ein Gesprächspartner gegenüberstehen, sind bereits Anzeichen der Verhandlungsbereitschaft merkbar.» The French, however, are strongly against any further expansion of the European free-trade area. The French forest industry is mainly afraid of Nordic countries acquiring a monopoly in pulp raw-material for the European paper industry, and of the danger of pulp imports going down with the increasing production of paper and board in those countries.

53. The European Free Trade Association

The other large European organization comprises Austria ,Denmark, Norway, Portugal, Sweden, Switzerland and the United Kingdom. It is evident that Finland should also join it in some way or another.

The EFTA agreement was signed on 4 January 1960, and after ratification by all its members, came into force on 1 July 1960. The EFTA countries merely form a free-trade area without any external customs tariffs. Each country can thus separately decide what tariffs she wishes to impose on a third country. In Article 2, the aims of the organization are mentioned in 4 points. Point d) can be considered as the conclusion and reads as follows: »att bidraga till en harmonisk utveckling och expansion av världshandeln och till en gradvis avveckling av hindren för denna.» (*To contribute to a harmonic development and expansion of world trade and towards a step by step abolition of obstacles to this.*) (EFTA 1959 p. 1).

The tariff reductions within EFTA are to follow this schedule:

		%
1 July	1960	80
1 January	1962	70
1 July	1963	60
1 January	1965	50
1 »	1966	40
1 »	1967	30
1 »	1968	20
1 »	1969	10

The figures indicate the highest percentage permissible of the basic tariffs in force between member countries as from 1 January 1960. There are a few exceptions. For example if the customs have been temporary abolished they can be raised again before 1964 if needed. As of 1 January 1970 the free-trade area is to be an accomplished fact. If so decided, this schedule can be shortened. In the case of Portugal it has been extended to 20 years.

With regard to fiscal duties, it has been decided that fiscal charges on imported goods may not exceed those on corresponding home-produced goods. Paragraph 1 of Article 8 states in respect of the prohibition of export customs: »Medlemsstaterna skola icke införa eller öka exporttullar och skola från och med den 1 januari 1962 icke tillämpa sådana tullar.» (*Member states should not introduce or increase export tariffs and should not from 1 January 1962 employ such tariffs.*) (EFTA 1959 p. 5). Neither are any quantitive export or import restrictions permitted. The former must be abolished by the end of 1961, the latter by 1969. State revenue duties and other general charges imposed to protect home-industries must be abolished. The protective part of taxes and other fiscal charges must be eliminated by 1962.

There are detailed provisos regarding measures to take if a home industry finds itself in difficulties on account of increased imports from another member country. The same holds good if the export country applies a lower tariff on raw-materials for export goods than the import country does. Further regulations must also be worked out by 1970 at the latest concerning the reimposition of customs fees.

The tariff reductions are applied to three categories depending on the production and refining stage. All goods produced within the free trade area belong to the first group, which evidently includes all raw wood. Only certain agricultural and fishing products are excepted. Thus EFTA does not count raw wood as an agricultural product, which have mainly been left outside the scope of the agreement. In the case of further-refined products the origin of the material is the deciding factor. Here a special list of raw-materials has been made, including timber and pulp. The origin of these raw-materials need not be declared when claiming a tariff reduction. Thus the agreement tries to avoid decreasing imports of raw-materials from other parts of the world. Furthermore there are 7 articles concerning packing, customs, etc. In these articles the proof-of-origin rule is the most important point.

If import restrictions are being applied, quotas must be raised by at least 20 % by 1 July 1960. If countries other than those of EFTA have had quotas, the EFTA part must be raised by a corresponding amount. Each year the general quota level must be increased by 20 %. Other steps can however be discussed in case of difficulty. In the event of payment difficulties, special quantity restrictions can be allowed for a period of 18 months, but no more. Restrictions may also be allowed if unemployment increases or demand falls on account of increasing import.

No export premiums or subsidies etc. are allowed, and export production must be freed of special direct or indirect taxation and social costs, interest subsidies on loans and so forth, i.e. anything that would destroy the advantages of the tariff reductions. In the matter of public enterprise, also, the agreement provides that step by step the member-countries should abolish any part that protects home production. No purely national viewpoints will be admitted in such cases.

According to article 16 on the founding and running of an economical enterprise, it is said that a foreign subject of a member-country must be treated as favourably as regards his rights as a citizen of the home country. Subject rights are understood to cover individuals, firms and other juridical persons alike. The regulations concerning economic enterprises cover those producing or trading in goods demanding proof of origin. Thus it does not apply to banks, transport and other services. It is not, however, intended to prevent a country from watching over those who enter the national capital market and who will be owners of natural resources.

The provisos of EEC and EFTA correspond almost fully in the reduction of customs tariffs and of connected restrictions. EEC contains some covering clauses in Article 226 to be used if needed, i.e. if difficulties appear during the transitional period. The EFTA agreement, however, seems to allow for more possible exceptions. One example is Article 20, stating that quantitative restrictions are permitted in the event of payment difficulties and unemployment.

This exception seems only to cover industrial enterprises and can hardly be applied to forestry. In times of depression, unemployment is not so prominent in forestry as in many other industries. Similarly, there would be no decrease in demand in the event of disaster removals, but there may still be considerable pressure on prices (cf. WINKELMANN 1960 p. 184). Nowhere is it mentioned what will happen if immediately after the 18 months are over, fresh payment difficulties arise. KARA (1960, p. 28) concludes with the view that the EFTA provisos are just right moderate. This, however, seems to be open to doubt. We consider that the EFTA agreement is dependent on a rather smooth development in the economic situation in order to survive. In the event of a recession there are too many possibilities of evading the agreement. For example, indirect export premiums in the form of reduced freights for transport to border stations can hardly be stopped. This can easily happen in the timber trade. It can be mentioned that Yugoslavia has been following such a system since 1 January 1959. In other words, in order for the agreement to succeed, the member countries must follow it in the spirit, not merely in the letter. It must also be noted that if a member country wishes to withdraw, it can do so according to Article 42, with a year's notice.

The big difficulty for a free trade area is evidently the fixing of the country of origin. There must be evidence of origin, otherwise outsiders can introduce goods through the country with the most favourable custom's duty. Difficulties will evidently also be caused by dumping and questions of competition. A common market without an external customs union outward thus has to overcome serious problems.

The EFTA group is quite different from EEC, as in the case of wood products, it contains both countries importing wood such as the U.K. and Denmark, and export countries, like Sweden and Austria. EFTA will hardly cause any direct change in the raw-wood trade of the member countries, because they have already mainly had duty-free raw-wood trade and the most severe import and export restrictions have been abolished earlier. Important changes of an indirect nature will, however, take place when duties on refined wood products are abolished. These questions will be examined in a later chapter.

Even if EFTA is declared non-political, the financial and economic policy of a member country cannot help affecting all the others. Opinions will be discussed, the principle being that all members should endeavour to follow an economic policy in keeping with the basic ideas of the EFTA agreement.

Both EFTA and EEC are so recently founded, that many of the details are still under discussion. Thus new decisions can rapidly make the present picture out of date. Especially in regard to co-operation between EFTA and EEC, the position may change. How such co-operation will be established is an open question. One of the principal aims of EEC is to tie W. Germany and France so completely together that war between these countries will become impossible. EFTA, on the other hand, is interested only in the economy and trade of its members. The only possible solution would be that EEC is completely amalgamated with EFTA for the care of its economic interests, while the political matters — as far as it is possible to differentiate between economy and policy nowadays — are attended to by EEC. It looks as if the contrary — EFTA being completely amalgamated with EEC — would be still more difficult (cf. ZURCHER 1958 p. 204). Obviously EFTA should be turned into a customs union as soon as possible in order to negotiate with EEC on level terms.

Under the HALLSTEIN plan, a much shorter time is foreseen for the EEC agreement to come into force. The first step towards the external customs tariff may already have been made by 1 January 1961. There are difficulties, however. W. Germany, in particular, is hesitant about shortening the original time lag. It remains to be seen whether this plan has been drawn up merely to put pressure on the EFTA-group. At all events projects to speed up EEC have forced EFTA to take similar steps. Thus it is planned to reduce customs duties by a further 10 % in January 1961, i.e. simultaneously with EEC, and to abolish quantity restrictions faster than was originally agreed to.

The question of Finland's joining EFTA was widely discussed in 1959. Thus SPEER in his annual survey of 1958 in the »Allgemeine Forstzeitschrift» includes Finland in the EFTA plans while in Vienna, KEVSCHAGL 1959, in a talk he gave, considered this quite impossible. After Finland's position has been decided there remain only three countries outside the W. European co-operation, Ireland, Spain and Greece. Of these, Spain and Greece are of less importance from the point of view of the raw-wood trade. At present Spain is in debt to Finland, and this has resulted in stagnation in the timber trade between the two countries. Ireland, on the other hand, imports fairly large quantities of forest products, mainly from the Scandinavian countries. From a trade-political point, Ireland is rather favourably disposed towards EEC, but is considered to have too few industries to be included. Experience so far gained shows that this should not be a definite obstacle. Northern Ireland, as part of the U.K., belongs to EFTA.

54. The East bloc (Komekon)

Efforts at co-operation in W. Europe have naturally affected the East. Thus the Soviet's new 7 year plan includes a »allseitige Ausbau der wirtschaftlichen

Zusammenarbeit der Sovjetunion mit allen sozialistischen Ländern». (IH 1959 No. 9 p. 3) Instead of a customs union or a free-trade area, a council has been founded to give economic help under Soviet guidance. Evidently the final aim is complete economic integration of the East bloc comparable with the EEC agreement.

Chiefs of the council, known as Komekon, meet in the capitals of its member countries in turn. Under this council, there is a deputy council in Moscow and under this permanent secretariats, also in Moscow. The secretariats are divided into 16 sub-departments of which Group 7 is in charge of wood, cellulose and paper, and Group 13 in charge of forestry. Since 1956, Group 7 has been situated in Moscow or Budapest and Group 13 in Bukarest. It seems as if the Eastern countries have come much further with this organization than W. Europe. It is evident that through these groups a systematic development of the forest industry will take place.

Apart from the Soviet Union, Komekon includes Bulgaria, Czechoslovakia, E. Germany, Hungary, Poland and Rumania, all of which except Hungary and E. Germany, have a positive timber balance. Yugoslavia does not directly belong to Komekon but has tied herself to many of these countries through long-term trade agreements. In order to co-ordinate all the long-term plans, bilateral agreements have been concluded between these countries to cover the period 1958—65.

By means of such co-ordination, they hope to be ready for the final integration of the East bloc in 1965. The idea is that this will be a better basis for competition with the capitalistic countries. The East bloc countries seem to be adopting the rather dubious national-economic principle of only allowing unlimited exports to W. Europe but no corresponding imports.

Naturally, the East bloc is strongly against all efforts at co-operation in W. Europe, referring in scathing terms to their political results. (Cf. A Common Market in Western Europe, 1957). For example ZURCHER (1958 p. 206) writes: »there can be no doubt that Russia regards the European Movment as one of the major developments of the present era and she is determined to marshal all her force to oppose and deter it.» The Soviet Union fears that integration in the West may lead to a strong Europe which will permit W. Germany to start a new aggressive policy.

6. The effect of trade policies on the raw-wood trade

61. Duties on timber

As already noted in the introduction, the timber trade in Europe during recent decades has been circumscribed by numerous special regulations which have only lately been partly abolished.

Restrictions have taken the form of direct currency or quantitative restrictions. Differential exchange rates have also been used. Thus no actual price competition has been possible. In bilateral trade negotiations there has always been a tug of war on the inclusion of further refined products, and here the raw wood has often been held out as an inducement.

In the long run, however, the improvement has been considerable. The situation in the beginning of the 19th Century was still as follows: »Um mit einer Ladung Importholz über die Weser und Fulda nach Kassel zu kommen, hatte ein Schiff 26 Zollstellen zu passieren!» (LÖBE 1956 p. 54). Now it looks as if in the near future it will be possible to travel with a load of timber through large parts of Europe without passing a single customs barrier. But there are still left a few customs and other restrictions for timber that merit study. We start with the custom duties imposed by the most important countries on different raw-wood products. As the nature of the raw-wood trade may be affected by the duty on more refined products we must also, to some extent, study the situation of the wood industry.

Most countries in W. Europe have adopted the Brussels nomenclature and have in this conection renewed their tariffs. In many countries several tariffs are quoted depending on different preference grants, customs agreements or on general or temporary duties, etc. Since all the EEC countries have already completed their first tariff reductions, duty in these countries has been divided between standard tariffs for outsiders and EEC tariffs for members. The situation has been the same for the EFTA countries since 1 July 1960, though the reductions do not yet appear in the customs duties quoted here.

In the new Brussels classification, Section IX interests us as it covers wood and goods made of wood, and Section X because it covers material for the production of paper. In Section IX Chapter 44, particularly, the following items are important for the raw-wood trade:

4401. Fuel wood, in logs, in billets, in twigs or in faggots; wood waste, including sawdust.
4403. Wood in the rough, whether or not stripped of its bark or merely roughed down.
4404. Wood, roughly squared or half-squared, but not further manufactured.
4407. Railway or tramway sleepers of wood.
4409. Hoopwood; split poles; piles, pickets and stakes of wood, pointed but not sawn lengthwise . . .

Sawn wood falls under the following item:

4405. Wood sawn lengthwise, sliced or peeled, but not further prepared, of a thickness exeeding five millimetres.

and planed goods under the following:

4413. Wood planed tongued, grooved, rebated, chamfered . . .

Plywood is divided in two items:

4414. Veneer sheets and sheets for plywood . . .
4415. Plywood, blockboard, laminboard, battenboard and similar laminated wood products . . .

Finally items 4416 and 4418 cover wood panels and reconstituted wood.

4416. Cellular wood panels, whether or not faced with base metal.
4418. Reconstituted wood, being wood shavings, wood chips, sawdust . . . agglomerated . . . in sheets, blocks or the like.

The other items in Chapter 44 cover different carpentry products, wooden tools, boxes, barrels and bales, household articles, reels and bobbins, etc., which are of less interest from our point of view.

The whole of Chapter 47 in Section X is however of interest. It is divided into two items:

4701. Pulp derived by mechanical or chemical means from any fibrous vegetable material.
4702. Waste paper and paperboard.

and finally in Chapter 48 we find:

4801. Paper and paperboard, machine-made, in rolls or sheets.

This item is divided in several sub-items which differentiate between the most usual kinds of paper, such as newsprint, silk paper, kraft paper, and so on. Items 4802—4809 comprise special papers.

The texts of these items, given here in their original English version, do not differ in the customs tariffs of the other countries more than is normally to be expected from translations. Various countries, however, divide their items into

different sub-items according to each country's own detailed classification requirements. As this sub-classification is of interest, at least as far as raw-wood items are concerned, the following comparative study can be made. The abstracts quoted are, if available, taken from the original customs books, otherwise from Bulletin International des Douanes.

Item 4401 (fuelwood) has not been divided into sub-items in Finland, Sweden, Denmark, Austria, W. Germany and the Benelux countries. In all these countries the import of fuelwood is duty-free.

Norway also allows duty-free imports, but has sub-divided the item into:

	Tollsats
4401. ved til brensel	fri
treavfall, herunder sagflis	fri

In the U.K. a full duty of 10 % ad valorem is imposed on this item, only the Commonwelth countries have preferential duties based on preference agreement, through which exemption from duty is attained.

In W. Germany the item is duty-free but a so-called »Ausgleichsteuer» is imposed as a percentage of the value, according to the following:

	Zoll für EEC	Zoll für andere Waren
4401. I Sägespäne: (As: 4) / II Andere:	frei	frei
a bis 31 Dezember 1959 (As: frei)		
b vom 1. Januar 1960 an: (As: 4)		

In March 1960 its enforcement was postponed until 1 January 1963, so the import of actual fuelwood is still entirely free.

France has sub-divided group 4401 as follows:

	Standard duty M.T.	EEC duty
4401. A. Fuel wood, including wood prepared for gas-producers:		
a. Coniferous	free	free
b. Other	»	»
B. Wood waste, other than sawdust	»	»
C. Sawdust		
a. Rough	free	free
b. Sieved or screened, or agglomerated . . . . . % ad val.	10	9

As we see, the item is duty-free with the exception of certain quality of sawdust.

Switzerland has divided fuelwood into three sub-items with the following tariffs:

		Zoll in Fr. 100 kg brutto
4401.	10 Laubholz	—.10
	20 Nadelholz	—.10
	30 Sägespäne (Sägemehl), Hobelspäne und andere Holzabfälle	—.05

Italy has the greatest number of sub-items:

		General duty % ad val.	Temporary duty % ad val.
4401.	a Fuel wood of all kinds:		
	1. Coming from ships broken up in Italian shipyards	8	5
	2. Other	20	11
	b Wood waste		
	Sawmill waste imported for the manufacture of mechanical and chemical wood pulp is admitted free of duty.		
	c Sawdust		
	1. Unworked	10	—
	2. Other	20	15

According to the above, only saw waste for the production of pulp can be imported customs free. In respect of the other items, we can note that the temporary tariffs are to be used against all countries, including those not given preferential treatment. General customs therefore lose their practical importance. Furthermore, according to Article I of the Presidential Decree No. 1125 of 1 November 1951, a 10 % reduction is practised on all these tariffs. In practice duty on fuelwood is thus 9.9 %, while unprepared sawdust can be imported free. Beyond this come the EEC reductions.

Item 4403 (wood in the rough) is far more complicated. Only Finland, Sweden, Denmark, and the Benelux countries have no sub-divisions. In these countries the entire item is customs-free. In Norway the item is also customs-free, despite which the following detailed sub-division has been made.

	Tollsats
4403. Sagtømmer og finértømmer	fri
— av nordisk furu eller gran	»
— av andra bartræer	»
— av nordiske løvtræer:	
— — bok	fri
— — eik	»
— — osp	»
— — ask	»
— — bjørk	»
— av andre tresorter:	
— mahogny	fri
— teak	»
— hickory	»
— andre	»
minetømmer og props	»
kubb og cellulosetømmer:	
— av furu	fri
— av gran	»
— av andre tresorter:	
ledningsstolper	»
andre	»

This sub-itemization surely makes absolutely clear which species of raw wood are to be included in the item. In the U.K. this item is also mainly free of duty according to the following sub-division:

		Full duty	Preferential duty
4403.	A. Persimmon, hickory and cornel	free	free
	B. Pine, spruce and aspen in logs not exeeding 50 inches in length and 12 inches in top diameter	free	free
	C. Logs of gaboon mahogany (okumé) with the bark and not less than 10 feet in length and 2 feet in diameter	free	free
	D. Pit-props and pit-poles	free	free
	E. Telegraph poles not less than 20 feet in length, not less than 5 inches in top diameter and not less than 6 inches in diameter 5 feet from the butt end	free	free
	F. Other:		
	Of coniferous species per standard	8 sh	free
	Of other species ad val.	10 %	free

The Austrian customs tariff has been divided as below:

			General duty
4403.	A. Coniferous wood and beech wood:		
	1. Post for electric cables:		
	a. Impregnated	% ad val.	6
	b. Other		free
	2. Other wood in the rough		
	a. Wood in the rough, for sawing		free
	b. Other	100 kg	7.00 sh.
	B. Other wood:		
	Notes — 1. Wood of this heading, for the manufacture of wood pulp and cellulose pulp, subject to permit		free
	2. Wood in the rough, of this heading, for the manufacture of veneer sheets, subject to permit		free

As we see, coniferous and beech woods form a special group. Impregnated poles of these species are subject to a 6 % ad valorem duty, while unimpregnated ones are duty-free. Saw logs can also be imported without paying customs duty, but other timber is subject to duty by weight. Other species can be imported customs-free, if they are used for pulp or plywood manufacturing. In such cases, however, import is subject to permits.

France has sub-divided item 4403 as follows:

		Standard duty % ad val.	EEC duty % ad val.
4403.	A. Common wood:		
	Coniferous		
	Barked or planed poles of a length of from 5.5 metres inclusive to 15.5 metres inclusive and with a butt circumference of from 45 centimetres exclusive to 90 centimetres inclusive:		
	a. Barked	10	free
	Planed:		
	b. Neither injected, impregnated nor coated	5	free
	c. Injected, impregnated or coated	10	free
	d. Wood for grinding, in logs of a length of less than 2.5 metres and with a butt circumference of from 20 centimetres exclusive to 110 centimetres inclusive, or in quartered logs of length of less than 2.5 metres	10	free
	Other		
	e. Logs with a butt circumference of less than 60 centimetres (pitprops, etc.)	15	free
	f. Other	15	free
	Other		
	g. Gaboon mahogany (okoumé)	10	free
	h. Oak	10	free
	Other:		
	i. Wood for grinding ... 20—75 centim.	10	free
	Other:		
	j. Logs with a butt circumference of less than 60 centimetres	10	free
	k. Other	10	free
	B. Fine wood:		
	a. Walnut	free	free
	b. Other	free	free

The first thing to be noted here is that imports from EEC countries are duty-free for the whole group. The standard tariff varies, however, between 5 and 15 % ad valorem, except for group B »Fine woods», which are duty-free. In the group »Common wood» coniferous timber is classified according to the degree of barking and impregnation. For countries outside the customs union a 10 % duty is imposed on mechanical pulpwood while pitprops pay a 15 % duty. As can be seen from the above, the rest of the species are in the 10 % duty class. Mahogany and oak, strangely enough, are both counted as common wood.

Of the real import countries, W. Germany has sub-divided group 4403 as follows:

		Zoll für EEC % ad val.	Zoll für andere Waren % ad val.
4403.	A. Leitungsmaste aus Nadelholz, auf beliebigem Wege und in beliebigem Grade imprägniert	9	9
	B. Anderes	frei	frei
	Ausgleichsteuer:		
	I. Leitungsmaste aus Nadelholz — 4 %		
	II. Anderes:		
	bis 31. December 1962 — frei		
	vom 1. Januar 1963 — 4 %		

The item is mostly duty-free, as only coniferous poles (Leitungsmaste) have been subjected to a 9 % ad valorem duty. The duty is the same for EEC countries and outsiders alike, since the W. German tariff reduction in 1959 was larger than that stipulated by EEC. A equalization duty of 4 % has been imposed on all goods in this item. In group B this will not come into force until 1963.

The Italian sub-division of item 4403 is extremely complicated:

		General duty % ad val.	Temporary duty % ad val.
4403.	a. Coming from ships broken up in Italian shipyards	8	5
	b. Other		
	1. Common		
	(a) Coniferous:		
	I. Pit-props (i.e. billets of logs of a length of not more than 2.5 metres and a circumference at the smaller end of not less than 45 cm.)	8	5
	Coniferous pit-props imported for use in Italian mining concerns are admitted free of duty, and no quota is fixed in respect thereof.		
	II. Posts (i.e. wood in the form of a truncated cone, of a length of more than 6.5 but not more than 15.5 metres and a butt circumference of more than 45 but not more than 90 cm.)		
	aa. Unworked, stripped of the bark or merely roughed down:		
	A. Impregnated	20	15 *
	B. Other	20	10
	bb. Smoothed with the axe, with the adze or with the plane		
	A. Impregnated — G-18 *	22	—
	B. Other	22	13
	III. Of other kind	10	free
	(b) Not specified		
	I. Pit-props (i.e.....)	8	—
	II. Posts (i.e....)		
	aa Unworked, stripped of the bark or merely roughed down:		
	A. Impregnated	20	15 *
	B. Other	20	10
	bb. Smoothed with the axe, with the adze or with the plane:		
	A. Impregnated	22	18 *
	B. Other	22	13
	III. of other kinds		
	aa Of beech, chestnut and poplar	13	free
	bb Of other trees	10	free
	2. Fine	8	free
	Of mahogany — G-5		

As already mentioned, the general tariff does not need to be noticed in practice. The rates marked * may not benefit from the 10 % reduction provided for in Decree 1125 of 1951. Duties marked with G should be imposed in the case of the countries mentioned in the General Agreement of Tariffs and Trade (GATT).

The regulation about 5 % duty for coniferous pitprops seems seldom to be applied, for the reason that pitprops imported for use in the Italian mines are duty-free. In such cases, according to special regulations, pitprops up to lengths of 6 metres and with a circumference of only 30 cm at the narrower end, are admitted.

In the case of posts, the Italian customs tariff makes a 5 % difference between impregnated and unimpregnated. Furthermore, duty varies depending on whether the posts are only semi-barked or cleaner.

Coniferous timber not included in Groups I and II may be imported duty-free.

In the case of »not specified» species, pitprops are admitted duty-free, but posts pay the same duty as those in the coniferous groups and the sub-division is also the same.

Group III »of other kinds» are admitted for import duty-free. This group is however of less interest to the Nordic export countries as it only comprises broad-leaved timber.

Of greater importance is the following addendum: »Unworked common wood imported for the manufacture of mechanical or chemical wood pulp is admitted free of duty.» Unworked timber here can include logs, barked or split. Furthermore, smallwood 1 metre long and with a circumference of 25 cm intended for the manufacture of panels, chips and waste can be imported duty-free up to a quantity of 2 000 000 quintals, i.e. 20 000 tons annually.

The last main group, covering all precious species, can be imported duty-free, with the exception of mahogany, which pays a 5 % duty ad valorem according to concluded trade agreements. In other words, imports of tropical timber are, practically speaking, free of duty.

The Swiss customs divide Item 4403 as follows:

		Zoll in Fr. 100 kg brutto
4403.	— Laubholz:	
10	— — Eichenholz	—.30
12	— — Buchenholz	—.60
14	— — anderes	—.20
	— Nadelholz	
20	— — Fichten- und Tannenholz	—.50
	— — anderes	—.50
30	— zur Herstellung von Papiermasse, Holzzucker, Holzwolle, Faser-, Span- und Leichtbauplatten	—.05

Thus Switzerland also has exceptional duties to ease the import of pulpwood and timber for the board industry.

For Item 4404 (wood, roughly squared) we can note that Finland, Sweden, Denmark and the Benelux countries allow free imports without any special sub-classification of the item. In Norway Group 4404 is completely duty-free but is sub-divided as follows:

	Tollsats
4404. Minetømmer	fri
annen trelast, rätt tilhogd eller tilskåret	
— av nordisk furu eller gran	fri
— av andre bartræ	fri
— av andre tresorter	fri

W. Germany does not charge customs duty, but there is the usual 4 % equalization tax on imports of this item. Austria differs between coniferous and beech wood on the one hand, and other timber, on the other:

	General duty % ad val.
4404. A. Coniferous wood and beech wood	4 % —
B. Other wood	free

Switzerland sub-divides as follows:

	Zoll in Fr. 100 kg brutto
4404. 10 Laubholz	—.80
20 Nadelholz	—.80

and the U.K. as follows:

		Full duty	Preferential duty
4404. A. Persimmon, hickory and cornel		free	free
B. Pit-bars*		free	free
C. Other:			
1. Of coniferous species	per standard	8 s.	free
2. Of other species	ad val.	10 %	free

Imports from most preferential countries are free, but in cases where full duty applies, part of the item is liable to duty.

France treates the item as follows:

	Standard duty % ad val.	EEC duty % ad val.
4404. A. Common wood		
a. Coniferous	7	free
Other:		
b. Gaboon mahogany (okoumé)	20	free
c. Oak	15	free
d. Other	15	free
B. Fine wood		
a. Walnut	free	free
b. Other	free	free

The whole of the item is duty-free for EEC nations. For other countries duty on »common wood» is rather high, coniferous being the cheapest, with 7 %.

Once again, Italy has the most complicated sub-division of the item:

		General duty % ad val.	Temporary duty % ad val.
4404. a.	Coming from ships broken up in Italian shipyards	8	5
b.	Other		
	1. Common		
	(a) Coniferous		
	I Roughly squared or half-squared or smoothed with the axe or with the adze:	12	5
	II Roughly squared by coarse sawing G-10	15	—
	(b) Not specified:		
	I Roughly squared		
	II aa Of beech, chestnut and poplar	15	8
	bb Of other trees	12	8
	II Roughly squared by coarse sawing		
	aa Of beech, chestnut and poplar	20	12
	Of Notofagus procera G-20		
	Square laths of beechwood, not further worked than sawn, ... 1—1.5 m length, 24—30 mm thickness	—	4
	bb Of other trees	18	12
	Of okoumé G-12		
	Of laurel G-15		
	2. Fine:		
a.	Roughly squared	8	5
	Of mahogany G-5		
b.	Roughly squared by coarse sawing G-12	15	—

Sub-item a. regarding ships that have been broken up in Italian harbours is of course not very important for the raw-wood trade. The sub-division continues along the same lines as for Item 4403 in its main groups of »common» and »fine», after which follows a detailed breakdown according to the species and the way the timber has been worked. Oddly enough a difference is made between axed and sawn timber. On the other hand there is no differentiation between impregnated and unimpregnated timber as there was in Item 4403. The duty on northern coniferous in this item evidently lies between 5 and 10 % depending on existing trade agreements.

Item 4407 (sleepers) is duty-free and not broken down into sub-items in Finland, Sweden, Denmark and Norway. In the customs tariffs of the Benelux countries the group is also undivided, but liable to an ad valorem duty of 2.7 % or 3 % depending whether the import comes from EEC countries or not. Imports from non-European territories connected with the Benelux countries are customs-free.

Austria differentiates between:

		General duty % ad val.
4407.	A. Unworked	free
	B. Impregnated	6

The same idea has been followed by W. Germany:

		Zoll für EEC % ad val.	Zoll für andere Waren % ad val.
4407.	A. Auf beliebigem Wege und in beliebigem Grade imprägniert (As: 4)	9	9
	B. Andere (As: 4)	frei	frei

As can be seen the whole item has to pay 4 % equalization tax.

In Switzerland sleepers are classed according to the degree to which they have been worked, as follows:

		Zoll in Fr. 100 kg brutto
4407.	10.— roh, ohne Bohrlöcher oder Schieneneinschnitte	1.20
	12.— andere (imprägniert usw.)	2.—

On the other hand, the U.K. and France sub-divide the item according to the kind of timber used, coniferous being in a group on its own. The U.K. customs tariff, however, has freed preferred countries from duty, as we see below:

			Full duty	Preferential duty
4407.	A. Of coniferous species	per standard	8 s.	free
	B. Other	ad. val.	10 %	free

French duties are rather high. The same percentage is taken for all species.

		Standard duty % ad val.	EEC duty % ad val.
4407.	A. Of Coniferous wood	20	18
	B. Other	20	18

Here we can see the tariff reductions made for EEC countries.

The Italian tariff is divided as follows:

		General duty % ad val.	Temporary duty % ad val.
4407. a.	Of a length of not less than 1.7 but not more than 2.6 metres, of a width of not more than 25 cm. and a thickness of not more than 15 cm.		
	1. Of beech	10	—
	2. Of oak	10	—
	3. Of other kinds	(a)	—
b.	Other	(a)	—

Here the difference is between beech and oak sleepers and between dimensions. If the sleepers come under sub-item 3 or group b the duty is the same as for 4404 axe-hewn, or 4405 sawnwood.

Item 4409 is of interest to the raw-wood trade as it includes piles, poles and chips. Finland, Sweden, Denmark and Norway allow duty-free imports of this group. Only Norway makes a difference between the groups »cellulose chips» and »others».

In the Benelux countries the item is divided as follows:

	Général droit % ad val.	CEE droit % ad val.
4409. a. Pieux et piquets appointés	9	9
b. autres	3	2.7

Switzerland has chips in a separate group:

	Zoll in Fr. 100 kg brutto
4409. 10-Holzspan	—.60
20-andere	2.—

Austria makes a difference between:

	General duty % ad val.
4409. A. Peg wood	5 %
B. Other	free

The W. German sub-division is somewhat more detailed:

	Zoll für EEC % ad val.	Zoll für andere Waren % ad val.
4409. A. Holz fur Fassreifen (As: 4)	7	7
B. Pfähle, gespalten; Pfähle und Pflöcke, gespitzt, nicht in der Längsrichtung gesägt (As: 4)	4	4
C. Holzspan aller Art		
1-aus rundgeschältem Birkenholz,	14	14
2-andere	frei	frei
D. Späne der bei der Eissigherstellung und zum Klähren von Flüssigkeiten verwendeten Art	frei	frei

Sub-group B, which interests us most in this connection, has a 4 % ad valorem duty attached to poles and piles, notwithstanding the country of origin.

In the U.K. full duty for this item is rather high and is sub-divided as follows:

	Full duty % ad val.	Preferential duty % ad val.
4409. A. Hoopwood	10	free
B. Other	20	free

France differentiates between species and dimensions as follows:

	Standard duty % ad val.	EEC duty % ad val.
4409. A. Split wood (hoopwood, split poles, stakes, laths), piles, pickets and stakes, pointed but not sawn lengthwise:		
a. Of coniferous wood and of a length exeeding 1.20 metres but not exeeding 2.50 metres	15	free
b. Other	15	13.5
B. Chipwood: wood chips	15	13.5

All countries outside the EEC group pay 15 % duty ad valorem for wood under this item.

The Italian tariff includes the following sub-divisions.

	General duty % ad val.	Temporary duty % ad val.
4409. a. Hoopwood	8	—
b. Split poles and chipwood:		
1. Chipwood of a thickness of 7 mm. or less	20	15
2. Other	(a)	—
c. Piles, pickets and stakes, pointed in the round or split	18	14
d. Other chipwood	20	12

Duty for split poles follows the tariff for item 4404, whereas the duty on whole piles and stakes is 14 %.

The other groups in Chapter 44 are of less vital interest to the raw-wood market, so no detailed survey has been made. The duties on further processed goods are of a certain interest because trough them it will be possible to estimate the effect of the reduced tariffs within EEC and EFTA. As a detailed study of all these groups would be too long, the following schematic table has been made to give some idea of the approximate extent of customs duty protection in different countries. The figures shown are for sawn and planed goods, plywood and board.

Table 55. Protective duty in some countries on sawnwood, plywood and board in 1960. % ad val.

Taulukko 55. Sahatavaran, vanerin ja levyjen tullitariffit eräissä maissa v. 1960, % arvosta.

	4405	4413	4414	4415	4416	4418
Austria	6 (free)	15 (18)	10 (18—20)	20	22	18
Benelux	5 (free)	6—10	6	6	6 (10)	10
Denmark	free	free (5)	3 (free)	0.6 ore/kg (5—9)	9	9
Finland	free	free (10)	5	6—9	9	5
France	7 (18—20)	12	15 (25)	20 (10—25)	25	18
W. Germany	free (9)	4—9 (free)	2	7—11	11	11—13.5
Italy	G—10, 12 (4—12)	18—20	18 (4—12)	G—25, 20	20	23
Norway	free	free (6)	free (15)	0.12 kr/kg (15)	0.12 kr/kg (15)	0.12 kr/kg
Sweden	free	free (6)	3	6—9	9	5
Switzerland [1]	2.50 (1.20—2.—)	15.— (25.—)	60.— (2.50—18)	20.— (15.—40.—)	20.— (40.—)	25.— 40.—
United Kingdom	8 sh stds (5—15)	7.5 (10—17.5)	10	10 (20)	20	20

[1] Fr. per 100 kg gross.

The figures given first indicate duty on wood of interest to the Nordic countries (mainly coniferous). Those in brackets show that on more special qualities. The following is a similar table for pulp and paper.

Table 56. Protective duty in some countries on pulp and paper in 1960. % ad val.
Taulukko 56. Puuvanukkeen ja paperin tullitariffit eräissä maissa v. 1960, % arvosta.

	4701	4702	Newsprint *Sanom. pap.* 4801	Other paper *Muu paperi* 4801	4802—09	4810—21
Austria	6—15 (free)	free	10 (5)	10—16 (free)	15—32 (free-6)	10—34
Benelux	free (15)	free	9	6—15 (18)	15—20 (6—12)	12—20 (6—10)
Denmark	free	free	free	5	free-12	free-18
Finland	free	free	free	10 (15)	10—20 (25)	10—25 (5)
France	20—24	free	25	18—25 (10)	15—25 (30)	20—25 (10—15)
W. Germany ..	4—11 (free-3)	free (11)	free	6—17	10—16 (6)	7—16 (free-4)
Italy	free	free (18)	10 (14)	15—23	18—20 (10—11)	18—25 (10—14)
Norway [1]	free	free	0.06	0.06 (0.26—0.32)	0.16—1.00 (0.06)	0.16—2.80 (8—24)
Sweden	free	free	free	3—5	4—6	5—10
Switzerland [2] ..	3.—7.—(1.—)	0.10	20.—	15—40.— (7—10.—)	15—50.—(5—10.—)	25—230.—
United Kingdom	free (10)	10	free	14—16 2/3 (10—20)	14—20	14—20 (free-10)

The tariffs for special qualities of paper in Chapter 48 are so complicated in many countries that a simplification of the scheme is very difficult.

The duties on raw wood concidered here are due to change in accordance with the schedules of the EEC and EFTA agreements. As the examined material dates from before 1 July 1960, the first EFTA and second EEC tariff reduction are not included. The figures in Tables 54 and 55 shows the duties which are applied in practice but without any EEC or EFTA reductions.

In addition to the special duties to be applied between the countries within the agreements during the transition period, EEC still has to co-ordinate its external tariffs. As mentioned earlier, these are mainly based on the tariffs in force in 1957. In the case of timber products this co-ordination has been difficult, but by now agreement has been reached in almost all cases. The external duty on raw wood has been fixed as seen overleaf.

The tariffs mentioned here for the different countries indicate the duties applied on 1 January 1957 or duties which for other reasons were considered a suitable basis for negotiations. Total or temporary suspensions have not been taken into account. The co-ordination of these tariffs naturally presented a great deal of difficulty. As we saw while examining the national tariffs, Items 4403 and 4404, in particular, were sub-divided in several different ways. Furthermore France had temporarily abolished some of the duties on raw wood and the Italian

[1] Kr/kg.
[2] Fr. per 100 kg gross.

Designation des produits	Drots ad val. pris en considération pour le calcul de la perception en: GY %	BX %	FR %	IT %	Droits ad val. du tarif commun %
4401. (1) Bois de chauffage, y compris les bois conditionnés pour gazogène et déchets de bois autres que les sciures	0	0	8	8	exempt.
				20	
4403. A. Bois tropicaux des espèces désignées à la Note complémentaire du présent Chapitre	0	0	10	8 20	5
			0	22 13	
				10 5	
1. Bois communs	0	0	10	8 20	5
				22 13	
				10 5	
2. Bois fins	0	0	0	8 5	5
3. Bois d 'acajou (b)	0	0	10	5	5
B. autres:			0		
I. Poteaux de conifères d'une longueur de 6 m inclus à 18 m inclus et ayant une circonférence, au gros bout, de 45 cm exclus à 90 cm inclus, injectés ou autrement imprégnés, à un degré quelconque (c)	15	0	10	20 18	8
(1) Bois de conifères sous forme de poteaux (c'est-à-dire bois de forme tronco-conique d'une longueur supérieure à 6.50 m jusqu'à, 15.50 m et ayant à l'extrémité moyenne un périmètre supérieur à 0.45 m jusqu'à 0.90 m), planés à l'herminette, à la hache ou au rabot (b)	15	0	10	18	8
II. non dénommés					
(1) Bois de mine (d)	0	0	15	8	exempt.
(2) Bois feuillus, à l'exclusion du bois de noyer commun et du bois de hêtre commun (hêtre rouge)	0	0	10	8 20	exempt.
				22 13	
				10	
(3) Bois pour la fabrication de pâtes à papier	0	0	10	10 13	exempt.
(4) Bois de conifères autres que ceux visés sous la rubrique (3) et à l'exclusion des bois de mine	10	0	10 5	20 18	exempt.
			15	22 10	
(5) Bois: (13 species)	0	0	10 0	8	exempt.
(6) Bois autres que ceux mentionnés sous les rubriques (3) à (5) et à l'exclusion des bois de mine	0	0	10	20 22	exempt.
			0	13 10	
(7) Poteaux, en bois communs de conifères, écorcés, d'une longueur de 6.50 m exclus à 15.50 m inclus et ayant une circonférence au gros bout de 0.45 m exclu à 0.90 m inclus	10	0	10	20	exempt.
(8) Poteaux, en bois communs de conifères, ni planés,					

Contd. — *Jath.*

Designation des produits	Droits ad val. pris en considération pour le calcul de la perception en: GY %	BX %	FR %	IT %	Droits ad val. du tarif commun %
ni injectés, ni imprégnés, ni enduits, d'une longueur de 6.50 m exclus à 15.50 m inclus et ayant une circonférence au gros bout de 0.45 m exclu à 0.90 m inclus	10	0	5	22	exempt.
(9) Bois de trituration, de conifères, en rondins d'une longueur de moins de 2.50 m et ayant une circonférence au gros bout de 0.20 m exclu à 1.10 m inclus ou en quartiers d'une longueur de moins de 2.50 m	0	0	10	10	exempt.
(10) Bois communs autres que les conifères	0	0	10	8	exempt.
	0	0		20	
				22	
				13	
				10	
(11) Bois fins	0	0	0	8	exempt.
(12) Acajou (a)	0	0	10	5	exempt.
4404. A. Bois tropicaux des espèces désignées à la Note complémentaire du présent Chapitre	0	0	15	8	5
			0	15	
				12	
				20	
				18	
				5	
				12	
(1) Bois communs	0	0	15	8	5
				12	
				15	
				18	
(2) Bois fins	0	0	0	5	5
				12	
(3) Bois d'acajou équarris ou planés à l'herminette ou à la hache (b)	0	0	15	5	5
(4) Bois fins, grossièrement équarris à la scie (a)	0	0	0	12	5
B. autre:					
(1) Bois feuillus, à l'exclusion du bois de noyer commun et du bois de hêtre commun (hêtre rouge)	0	0	20	8	exempt.
		0	15	12	
				20	
				12	
				18	
				15	
(2) Bois d'Orégon (Douglas Fir), pitchpin (y compris »southern pine»), pin ponderosa, pin blanc, »redwood»	0	0	7	8	exempt.
				10	
				6	
				12	
(3) Bois de frêne, cyprès, etc. (29 species)	0	0	7	8	exempt.
			15	10	
			0	6	
				15	
				12	
				20	
				18	
				15	
(4) Bois communs de conifères	0	0	7	8	exempt.
		0		10	
				6	

Contd. — *Jath*

Designation des produits	Droits ad val. pris en considération pour le calcul de la perception en: GY %	BX %	FR %	IT %	Droits ad val. du tarif commun %
(5) Bois communs autres que les bois de conifères, d'okoumé et de chêne	0	0	15	15	exempt.
	0	0		20	
				18	
				15	
(6) Bois fins	0	0	0	8	exempt.
	0	0		8	
				12	
(7) Bois de Douglas fir, du Western Hemlock, du Southern pine ... grossièrement équarris à la scie (b)	0	0	7	6	exempt.
(8) Bois commun de conifères grossièrement équarris à la scie, autres que ceux mentionnés sous la rubrique (7) (b)	0	0	7	10	exempt.
(9—14) Notofagus Procera, okoumé, laurier, acajou, Black Walnut, bois fins autres que Black Walnut		0			exempt.
4407. A. injectées ou autrement imprégnées, à un degré quelconque	15	3	20	10	10
				8	
				12	
				15	
				20	
				18	
B. autres	0	3	20	10	8
	0			8	
				12	
				15	
				20	
				18	
(1) Traverses en bois de conifères, d'une longueur de plus de 3 m, d'une largeur de plus de 30 cm et d'une épaisseur de plus de 18 cm	0	3	20	12	8
				15	
4409. (1) Bois feuillards; lisses, lattes et échalas fendus	12	10	15	8	8
		3		20	
				18	

tariffs depended on trade agreements. External duty was therefore dependent on which basis was used.

Item 4401 (fuelwood) has, as can be seen, been made duty-free externally despite the fact that both France and Italy were imposing ad valorem duties on this item under the tariffs in force in 1957. France has also freed it from duty under the new national tariff, as already noted in the previous section. It can be noted that according to the wording of this item, external duty only extends to the first two groups in the French and Italian tariffs. In other words, sawdust in all its forms has been omitted.

Item 4403 (wood in the rough) is split up into considerably more complicated sub-divisions. Certain tropical species are liable to a 5 % external duty whereas

others, especially those in sub-item 5 are duty-free. Of the other kinds of wood, impregnated or planed coniferous logs of certain dimensions are subject to 8 % duty. On the contrary, pitprops and pulpwood are completely free. In this connection pitprops are specified as follows: »des bois ronds (rondins) bruts, même écorcés, de conifères, d'une longueur maximum de 7 m et ayant au faible bout, une épaisseur maximum de 22 cm.»

Duty-free import of broadleaved timber is also admitted, with the exception of walnut and beech. Unimpregnated rough coniferous wood of different sizes and degrees of barking, can be imported duty-free, so it seems, under the stipulations of sub-items 7, 8 and 9. In sub-item 9, wood for grinding is specially defined, though pulpwood already was enumerated in sub-item 3. All precious woods are free of duty.

In the group 4404 (wood roughly squared) also a 5 % duty has been imposed on some of the tropical woods mentioned. On the other hand, ordinary coniferous and broadleaved woods (with the exception of walnut and beech) are completely free. Sub-items 2, 3 and 7—14 include various species all of which can be imported without paying duty. From this it will be seen that all the important American coniferous species are included. A full list of these species has not been considered necessary.

Item 4407 (sleepers) is liable to a 10 or 8 % duty, depending on whether the sleepers are impregnated or not. No differentiation between species has been made.

Finally an 8 % duty has been imposed on Item 4409 (split poles, piles . . .).

Practically all the way through it can be seen that external duties are lower than a pure mathematical average of the highest tariff permitted would indicate. For instance, duty on fuelwood should have been introduced in view of the Italian and French tariffs. Likewise, duty-free imports of pitprops and pulpwood, which only the U.K. and Benelux countries allowed in 1957, have now also been fixed in the external tariff. Only on coniferous wood in the form of logs which have been impregnated or planed and on sleepers, poles, piling and posts has a comparatively high duty been imposed, as seen above.

It should be noted that African wood, imported from the French territories and the Belgian Congo, is to enjoy freedom from duty within all the EEC countries, since territories outside Europe are included in the area of preference. On the contrary, as mentioned, the British Commonwealth is not included in the EFTA group.

In theory, the EEC countries should have no reason to impose any external duty on raw timber at all, as they all show a negative balance in industrial timber. Since several of the member countries have a strongly developed wood industry it might be thought that EEC should have decided on complete freedom from external duty for raw wood. There should not be a risk of any unforeseeable offer, as the export countries far prefer to refine their raw-material themselves. Not least will more raw wood be needed if EEC, as is expected, brings about a rise in the total volume of trade. With these considerations in view, present tariffs seem astonishingly high. Co-ordination of external tariffs will mean a general lowering of duty in France and Italy and an increase in W. Germany and the Benelux countries. It seems, however, as if the external duties are intended mainly as a trade-political weapon. It is doubtful if they will ever be of practical importance because an enlargement of W. European co-operation is well within the bounds of probability.

External duty on processed wooden goods, briefly summarized, appears as follows:

	External duty % ad val.
4405 (wood sawn) tropical sawn goods as indicated	10
coniferous sawn goods	13
minor exceptions as indicated	free
4413 (wood planed) whole item	10
4414 (veneer sheets) » »	10
4415 (plywood) » »	15
4416 (cellular wood panels) whole item	10
4418 (reconstituted wood) whole item	10

The duty on other sub-items under Chapter 44 varies between 10—18 %.

As regards pulp products, Item 4701 is liable to a 6 % duty more or less independent of the manner of production or quality. There are minor exceptions. Thus duty-free imports of pulp for manufacturing textile fibre are allowed, as are also those of pulp made from grass or similar sources. Under item 4801, paper, the duty varies between 6—18 % depending on the quality.

It may be of interest to compare the tariffs the Nordic Customs Union worked out for wood products. The proposal put forward by the Committee of Nordic Co-operation was as follows (cf. SOU 1958: 31 p. 111):

	Duty in % ad val.
Raw material	free
Semi-finished products (wood)	3—9
Finished products (wood)	8—10
Paper and board	5
Newsprint	free
Products made of paper and board	8—10

Before we leave the subject of customs duties, it is reasonable to enquire whether during the 1950's there have been any changes in duty on raw wood so far-reaching as directly to influence the orientation and scope of trade. Of the two classical trade-political weapons, — restrictions and customs duties —

the former were indubitably of greater importance during the 1950's, not least because duties imposed by import countries can be evaded by means of export subsidies. There can on the other hand hardly be any evasion of import permits. It is to be expected that the tariff policy will regain a certain value as the quantitative restrictions are dopped.

As already mentioned, tariff policy during the 1950's aimed, within the bounds of the GATT-agreement, at reducing duties. A similar trend has also occurred in the raw-wood trade in cases where it was not already completely free of customs duty. The reductions were often made in an effort to resist inflation in such a way as to push down the price of wood on the home market. The changes have only been of decisive importance in the case of Switzerland, which witnessed the following development during the 1950's. At the beginning of the decade Swiss duties on wood were briefly as follows:

	Duty in Fr. 100 kg gross
Coniferous raw wood	0.50
Coniferous sawnwood	2.50

In 1955 these duties were lowered temporarily to 0.05 Fr. for raw wood and 0.50 for sawn goods. The purpose was to lower timber prices on the home market.

As this was successful, the reductions were extended every year up to 1959. In 1958—1959 the timber prices seem to have fallen too rapidly on the Swiss home market, so as from September 1959 the former duty was reimposed. This increased the import price for raw wood by 3 Fr. per m^3 and for sawn goods by 10—12 Fr. per m^3. The result was that trade-connections which had become stablized during the period of low duty were broken off overnight, especially in the case of Austria. Once again, on January 1960, the Swiss tariff changed, but this time the purpose was a complete overhaul of the customs duty in connection with the change-over to the Brussels nomenclature. Duty was increased on the plea that the level had to be adjusted to match that of the other EFTA countries, an argument that could hardly be quoted in the case of duty on raw wood. With regard to raw wood, the new tariff raised the duty in Item 4403 on oak and beech by 50 % (former duty —.20 and —.40) and duty on the whole of Item 4404 rose from 0.50 Fr to 0.80 Fr. In Item 4407, sleepers had earlier been classified according to wood species, and duty varied between 0.80—1.30. Duty on coniferous fuelwood had been 0.40 per 100 kg/gross. This discriminatory duty was lowered to 0.10. On the other hand the duty on broadleaved fuelwood was doubled, from 0.05 to 0.10, because it was considered that the country's own fuelwood was being deprived of a satisfactory market. No other changes of importance were made. Duty on sawn goods thus remained practically unchanged.

These large-scale changes naturally affected the timber trade to a marked degree, as can be seen from the import figures. As far as trade with Austria is

concerned, the rises in duty have created a rather strained situation. This will be dealt with in more detail later.

No important changes have occurred in the other W. European countries. In the Benelux-countries a 10 % ad valorem duty on large-size foreign sawn wood was introduced on January 1952 to protect the local sawmills. However this aroused such opposition, especially in Belgium, that it was abolished on 15 March 1953. It was not in force for a long enough time to affect the raw-wood trade to any notable degree.

Before 1959, W. German and Italian customs duties on wood were about 25 % higher. The reductions made apply to all countries and have led to the same tariff now being used also with the EEC countries because the forced reductions from the 1957 level have not yet gone so far. In France the timber duties have been completely suspended on several occasions. These steps have mainly been taken to influence prices, as until recently imports have been subject to severe control.

The duties imposed have mostly resulted in a reduction of timber consumption because of the increase in price. In no case have they been so high as to render imports impossible. Of no less importance for the price level in most countries is the turnover-tax or price compensation methods used in the country concerned.

The following section will deal with timber controls and similar matters.

62. Quantitative export and import controls

During the 1950's all countries in Europe have indubitably practised some form of restriction in the timber trade. As a rule, both exports and imports have been controlled and trade permits have only been granted on a quota and licence basis. After the quota has been used up, no more permits have been granted. As an example of the absurdities to which such restrictions can lead, it can be mentioned that when Italy was no longer able to import squared timber of the Trieste type from Austria, it bought Austrian timber back from W. Germany (cf. Timber Bulletin for Europe 1957 p. 18). At present, Switzerland can buy coniferous sawnwood freely from France [1], but only small amounts against permits from Austria. Similar grotesque situations will occur during the transitional period if EEC and EFTA fail to establish co-operation.

In general, import restrictions have been abolished before the corresponding export restrictions. Thus in the middle of the 1950's OEEC (1956 p. 39) stated that: »Most countries (exept Sweden and Beneluxe) are still applying a strict quota system for exports of logs.» and with regard to the import of logs and sawn

[1] Since this was written, France has reintroduced quotas with regard to the Swiss trade (cf. HZ 1960 p. 1198).

timber »These products may be imported freely into all countries except France and Turkey.» (OEEC 1956 p. 39). Greater freedom has been allowed in the pitprops and pulpwood trade as in many countries these articles are easier to produce.

The reasons for wood controls have been numerous. During the immediate post-war period the fear of a timber shortage was perhaps one of the most important; it was feared that home industries would suffer from excessive exports. This view cannot be considered as prevailing to the same extent during the 1950's. Export and import countries naturally also regard the restrictions from entirely different angles. Import restrictions can be explained by currency difficulties, but the fact that exports of raw wood have even been restricted in typical timber-surplus countries seems rather peculiar at first sight. In Finland especially, the pros and cons of timber controls have been widely discussed. Thus the Economic Council held a special enquiry into this matter in 1958, at which many experts were called on to give their opinion. In many respects the findings produced here provide pointers also for other countries. A closer study of the Finnish controls seems therefore to be justified.

Raw-wood exports were restricted after the second world war in Finland under the Act on Emergency Powers. The restrictions were abolished between 1948—1951 but reintroduced in 1952 on the recommendation of the Bank of Finland, mostly for reasons of monetary policy. Nowadays controls are based on the Act on Restrictions of Economic Life during an Exceptional State of Affairs. This law has been renewed every year. In its Resolution No. 310 of 1953, concerning restrictions on foreign trade, the Goverment issued further regulations on the application of this law. The resolution provides that export and import permits shall be granted by the Licensing Office, in consultation with a specially appointed Committee for the Export of Round Wood. In practice the procedure has been that the purchase contracts are first stamped in the Department of Currency Supervision of the Bank of Finland at which it is checked that normal business practice has been followed. After this the agreement goes to the Export Committee for its opinion and then to the Licensing Office, which either grants or rejects the application (cf. Raninen 1951 p. 392. regarding customs procedures).

The following arguments against the restriction of exports have been put forward.

1. The buyers tend to look for other sources of supply as it is not certain that a Finnish permit will be granted and it may be slow in arriving.
2. During trade recessions, transactions involving permits are unable smoothly to follow price modifications on the world market.
3. Differences in geographical situation between the sellers have not been sufficiently taken into account.
4. Restrictions and red tape discourage initiative.

The following arguments are used in favour of maintaining restrictions.

1. When prices are falling the Export Committee has been able to halt the drop in export prices.
2. Restrictions have forced a large number of exporters to co-operate to a certain degree.
3. Unsound speculation has been discouraged, bilateral payment obligations have been met and the supervision of currency has been made easier.

In the investigation of the Economic Council (Talousneuvosto 1958) the above views have been studied in the light of figures on pulpwood and pitprop exports between 1948 and 1957. It was found that between 1948 and 1951 the biggest difference between annual export quantities was 2 716 000 m³, but during the years 1952—1957 only 2 522 000 m³. It was also noted that the average export had been smaller during the unrestricted years than during the period 1952—1957. These figures still prove nothing about the advantages or disadvantages of restrictions. The period 1948—1951 included the Korea boom so a specially sharp leap in export quantities was to be expected. The rise in trade volume is also a typical aspect of post-war development and can quite certainly be unrelated to restrictions.

It is difficult to ascertain whether buyers have switched to other markets because of the export restrictions, as several other circumstances may likewise have contributed to such a development. The figures in the market survey show that W. Germany has gone over to buying more pulpwood and pitprops from Sweden. It seems, too, that Finland has lost ground to Canada in the U.K. and Italy. Furthermore, the recent Soviet export drive has also been partly at the expense of Finland. Whether this could have been avoided if exports had been unrestricted is obviously a matter of doubt. The survey of 1958 (Talousneuvosto 1958) rightly points out that Sweden is in a better position concerning freights on the W. German market, as small coastal vessels can take cargo far up the W. German rivers and canals. The difference in freight between Sweden and Finland in 1955—56 was $ 1 per piled m³ and may well have been decisive. Likewise the falling trend in sales to the U.K. can be explained by the fact that British paper mills are often closely associated with Canadian firms exporting timber. On the Italian market, Finland has had to meet growing competition from the USSR which did not exist previously. In 1952—53 when Finnish pulpwood exports to Italy practically ceased, this country imported from Yugoslavia, Czechoslovakia and Austria. All these countries were practising export controls of greater or lesser severity. Obviously, one can agree with the Committee in its statement: »Suomen kohdalta tilastot osoittavat, ettei vientisäännöstely ole merkittävässä määrin vaikuttanut eri vuosien vientimäärien vaihteluihin.» (*The statistics show that for Finland the export regulation has not to any noticable degree influenced the changes in export volume in different years.*) (Talousneuvosto 1958 p. 14). This can also be seen in the proportion of rejections to the total number of permits granted. The following figures show rejections at first application in 1956—58 (in 1 000 m³):

	1956	1957	1958
Pulpwood	413	357	398
Pitprops	66	110	30
Others	66	16	70
Total	545	483	498

Following changes in buying contracts, a large number of these applications were eventually granted, and final rejections only numbered:

	1956		1957		1958	
	1 000 m³	%	1 000 m³	%	1 000 m³	%
Pulpwood	225	9.0	45	1.9	46	2.1
Pitprops	48	3.2	66	4.7	3	0.3
Others	32	6.2	9	2.1	9	1.4
Total	305	6.8	120	2.9	58	1.3

The ratio of rejections to total exports is so small that they are insignificant from the point of view of the national economy, even if the proportion to total exports seem to be somewhat more important than that concluded by the investigation of 1958. During times of prosperity, most permits were granted. Delays and rejections have occurred during recessions. The most frequent cause of rejections has been an excessively low price.

The Export Committee feels that it has been able to retard the falling of prices by such a policy. A certain scepticism is justified, however. Many of the experts consulted have begged to differ. Despite its comparatively large share of the total European raw-wood market, Finland has no such monopoly as would enable it to succeed in dictating a price policy of its own. Prices for raw wood are dependent on the conditions within the wood industry as a whole. As stated before, raw-wood exports only represent a 20th of total European fellings. In a supplement to the Committee's report (PAUL in Talousneuvosto 1958) one of the experts points out that: »Kun kansantaloudellisesti saavuttamattomana on pidettävä sitä, että Suomi voisi lisenssikontrollin avulla ylläpitää korkeampia hintoja kuin maailman puutavara- ja selluloosa hinnoista johtuvia vientihintoja, on lisenssikontrolli aivan merkityksetön metsän hintojen kannalta.» (*One must consider it impossible, that Finland, with the help of licence control, should be able to maintain higher prices for raw wood than dictated by the world prices for wood and pulp products. Therefore the licence control is of no meaning from the point of view of stump prices.*) Other experts produce concrete examples of cases where the Committee's sole achievement through its price policy was to have the same lot sold off even cheaper later on. On the other hand, the Committee only points out the increases in price it has achieved.

Another argument brought forward in favour of restrictions is the fact that

buyers nowadays co-operate to a great extent and present a common front on the market, while the exporters lack corresponding strong permanent organisations. For example, British pitprop purchases are attended to by a single buyer, while importers of pulpwood in Europe are considered to be 70 % united. In other words, the sellers would be more liable to lose their heads and agree to price cuts. Such ideas seem to be based upon the general post-war view that all economic activity must be supervised. In actual fact, the average business man has a profound reluctance towards selling at a loss, i.e. under the current market price. If the economy is left to itself, supply and demand decide the price of goods. Right from the start the forest owner appears to be in a better bargaining position than the buyer, as he can generally postpone a sale whereas the buyer must purchase raw material in order to keep his industry running. In the statement by the Economic Council we note the following: »Talousneuvoston mielestä maassamme on ennen pitkää varauduttava siihen, että pyöreän puutavaran vienti tulee olemaan vapaata.» (*The Economic Council is of the opinion that in our country one should soon be prepared for the exports of round wood to be free.*) (Talousneuvosto 1958 p. 19). The investigation, however, finds that before the emancipation the exporters must volunteer to organize and the export be made dependent on a commercial licence. A strong branch organization is always to be recommended as thus it is easier to keep an eye on decoys and speculative enterprises. No doubt controls in this respect have been useful. They have also made currency control and the fullfilment of bilateral agreements much easier. But as has been noted, present day trade policy is mainly global and the currency regulations have also outlived their usefulness. If controls continue, firms will simply look for ways of getting round the regulations and keep capital abroad — capital that with free convertibility would no doubt be exchanged into Finnmarks.

The original purpose of export controls was to prevent a timber shortage in the country. As we saw in our analysis of the Finnish wood balance, there is no reason to fear this at present. The Economic Council, too, admits in its statement that the export is necessary for the time being as Finnish industry cannot yet absorb all the timber, while from the viewpoints of sylviculture and full employment it is desirable to keep the fellings as high as possible. Since trade-political and monetary considerations have lost their former significance, there is no longer any major reason for continuing raw-wood controls in Finland.

Another argument against restrictions is that the longer they continue the more hopeless becomes the situation of small firms. »Man torde icke kunna förneka att de större exportörerna, på de mindres bekostnad, haft fördel av reglementeringen.» (*It cannot be denied that the bigger exporters have gained advantage from the regulations at the expense of the smaller.*) (ERICKSON in Talousneuvosto 1958).

Among the other export countries, Sweden has imposed no restrictions on its raw-wood exports, while those of Norway and Austria have been subject to export permits during the 1950's. In Austria these restrictions seem to have caused an extremely strained situation between the forest owners and the wood industries. As a rule, however, the two parties seem to have made free agreements regarding the home situation on the raw-wood market without Government intervention. Already in the beginning of the 1950's the forest and the industry owners made an agreement fixing maximum prices for timber delivered free at railway-station in different districts.

Exports on the other hand were tied to minimum prices fixed by the Austrian State and no licences to lower prices were granted at all. Furthermore it was stipulated that Austrian exporters should increase their prices whenever the price of raw wood rose in the import countries. The principal aim of the export restrictions was to discourage the export of raw wood in favour of the home wood industries. As we saw in the market analysis, success has been achieved in this respect. From February 1953 on, a new export system was adopted, abolishing minimum prices (excepting for Italy) and efforts were made to cut down on the »paper war». The trade restrictions applied to practically all raw-wood items of importance, and also to sawn goods. Even through minimum prices were abolished, a continued control on export prices was maintained by means of the licensing system. The remaining minimum prices applying to exports to Italy so provoked Italian buyers that they opened negotiations to increase imports from Yugoslavia at Austria's expense.

There were also voluntary export restrictions. Thus, at the end of 1954, the Bundesholzwirtschaftsrat decided to cut down exports of coniferous sawn goods to a maximum of 1 375 000 m³ during the first half of 1955, and to extend the restrictions to the end of the year if needed. This voluntary action was probably taken following the concern expressed at over-fellings in Austrian forests.

In 1955 the Act on Emergency Regulations on Foreign Trade expired, and so the exports should have been freed. During 1956, however further restrictions were imposed on foreign trade for a period of 3 years forward. As under the new law most forest products required a licence, the procedure changed, practically speaking, not at all. The export of coniferous sawn goods, however, was freed from 1 January 1956. When this Act expired in 1959, it was decided to continue foreign trade controls for another two years. It is doubtful if this extension of controls was necessary. During 1958, Austria earned a total revenue of 3 000 million shillings on all her exports of wood products. Of this amount only 200 million came from raw wood. An abolition of restrictions need not lead to an increase in exports unless home prices are kept down in relation to those paid by foreign countries. In Austria the branch organisations seem to be strong enough voluntarily to reach agreement concerning raw-wood supplies.

Thus in the beginning of 1960 the United Paper Industries, on the one hand, and the representatives of the forest owners, on the other, agreed on raw-wood trade and supplies until the 1 January 1970. It has been decided that pulpwood must first be offered to the home industry and if no agreement is achieved within a certain time, an export licence should be given. This seems to be a favourable arrangement to all parties.

In fact, the situation before the last extension of foreign trade restrictions was rather absurd. Permits were needed for raw-wood exports, but imports were free. Thus the forest owners were completely in the hands of the wood industries. Under the latest restrictions, however, import has also been made subject to permits, for the most important groups but only for countries outside OEEC.

The import restrictions therefore mainly concern the East bloc countries. The size of the quotas to be admitted will naturally be decisive for the trade. There appears to be no justification for making the adoption of beech wood for cellulose manufacturing still more complicated. The annual coniferous import quota has been set at 125 000 m³ by agreement with the forest owners' representatives. Extra quotas can be allowed for export in the event of coniferous wood surpluses due to avalanches and other catastrophes. Such quantities must not exceed a total of 100 000 m³ annually.

It seems as if the Austrian authorities have been unable to draw conclusions from the country-wide survey figures, when wood imports are still being made complicated. One would think the Austrian wood industry simply cannot get too much raw wood. Furthermore, on account of her central position, Austria already has good opportunities for trading wood products on surrounding markets and it is thus difficult to understand the import restrictions. Surprisingly enough, certain representatives of forestry still consider that there is a sufficient raw-wood reserve within the country and are against permit-free imports and granted tax reductions. »Obwohl eine ausreichende Versorgung aus dem Inland sichergestellt ist.» (Holz-Kurier 1959 No. 10 p. 3).

As mentioned above, Austria's central position makes it possible for her to trade with a large number of neighbouring countries. This has also been considered in special agreements, for example that regarding trade between the Tyrol and Vorarlberg, on one side, and Alte, Adige and Trentino, on the other.

All the import countries have experienced restrictions of major or minor severity during large parts of the 1950's. Import restrictions on the British market, however, were abolished already at the beginning of the decade. Towards the end of 1951, the Government took the necessary measures to return coniferous wood imports to private hands and to allow importers to choose their own sources of supply. Such freedom was granted within global limits of import quantities and individual quotas to the importers, depending on activity during 1951. The global limits were to be set with a view to the

currency situation. By the following year, however, imports were entirely freed with the exception of broadleaved wood imports from the dollar countries. In 1953, consumption restrictions were also finally abolished. Surprisingly enough, after the first rush to buy had spent itself, no noticeable increase in import demand was observed.

In France, numerous regulations were in force during the entire 1950's. According to a Government decision of 31 October 1951, all export of coniferous wood, except for a small quota of maritime pine sawn goods and sleepers, was prohibited. Broadleaved timber quotas were also reduced. The reason for this decision was that the French exports in 1950—51 were considered to have grown too fast. The purpose was also to check the sharp speculative rise in prices. Henceforth only oak or chestnut staves and, under certain conditions, tropical woods, could be exported quota-free.

These restrictions were introduced so late in 1951 that they had only a small effect upon the figures for that year. In 1952, however, exports came nearly to a total stop, so restrictions were relaxed during the later part of the year. In particular, restrictions on broadleaved timber seemed rather unnecessary as the forest resources in France were ample to cover requirements. Quotas for coniferous wood of smaller dimensions were slowly increased during the following years, but mainly consisted of maritime pine. Export of coniferous logs was still prohibited except in certain frontier zones where special agreements prevailed. Freedom of export existed in one such zone 10 kilometres in depth along the Swiss border. But in 1954—55 Swiss purchases rose so steeply that France introduced quota restrictions that remained in force right up to 15 November 1959. As soon as the restrictions were abolished, exports again became excessive. The sawmills in the Jura and the Voges near the border particularly complain that freedom from controls hampers their supplies.

Export quotas in France were abolished for fuelwood, pitprops and maritime pine sleepers as from 23 March 1954, whereas quotas for sleepers of broadleaved wood were re-introduced. The granting of permits for sleepers was made conditional mainly upon whether the exporters had delivered a certain quantity to the French State Railways (SNCF). Of broadleaved timber, oak, beech, poplar and walnut were subject to quota; other species were export-free.

The gradual abolition of controls continued until in 1 January 1959 90 % of the exports were free-listed and since 1 January 1960 absolute export prohibition only exists for industrial coniferous raw timber of more than 10 cm thickness. Export quotas to certain countries or groups of countries are still imposed for the following items: coniferous pitprops and pulpwood, poplar timber and sawmill-waste. Between 1 October and 30 April, the export of oak exceeding 200 cm in circumference at the thicker end is prohibited. The following species of timber may be exported against an export permit which is granted automatically unless there are difficulties in payment: broadleaved pitprops, posts,

coniferous raw wood (below 10 cm), oak (less than 200 cm circumference), beech and ash timber. All other types timber (4401—08) may be exported freely, provided currency regulations are observed. Such in the latest freeing all raw wood for sawing (for exceptions, see previous notes) and all firewood have been released. Of broadleaved wood, practically speaking, only poplar and thick oak are subject to controls. Prior to 1958 there was total export prohibition for coniferous industrial timber, and since that year this particular type of wood has been subject to quotas. However, no quotas for pine or spruce were granted.

Since the removal of controls in 1959, raw-wood exports have risen by 25 %. Quantitative import restrictions have also been abolished for cellulose, but instead a duty of 6—10 %, depending upon quality, has been introduced. It can be mentioned that particularly at the beginning of the 1950's timber production and trade in France bore a very heavy tax burden.

Switzerland imposed a price control on coniferous wood in January 1951, but this was abolished on 11 September the same year. As the voluntary controls that the timber merchants had agreed to observe could not be maintained, the authorities restored price control and timber quotas on 30 January 1952. Broadleaved wood, however, remained free. As already mentioned, in 1956 and 1959 Switzerland followed an active customs policy in order to direct the timber trade in desired direction.

The financial crises in W. Germany in the spring of 1951 led to sharpened import restrictions. The quota regulations in the majority of trade agreements had to be revised on account of currency difficulties. Export formalities were altered in that the checking of documents was transferred from commercial banks to interior customs offices. In May 1952, the prices for wood were freed on the home market. The foreign timber trade was to a large extent freed in 1954. Permits were still necessary for logs, pitprops, pulpwood, coniferous sawnwood and staves in the rough, but were granted without difficulty provided quantities were available. Since 1 January 1960, W. Germany has abolished all export prohibitions to EEC countries.

The Benelux countries have as a rule maintained a free-trade trend in their policy, thanks to which timber-trade restrictions have been insignificant. In Belgium the wood exports have been free from State intervention since 1956.

As can be seen above, restrictions have in many countries either been abolished or considerably released. It appears, therefore, that export and import restrictions will no longer be of greater importance for the raw-wood trade during the 1960's. As long as wood could only be exported according to a quota to each country, there was no possibility of taking advantage of better prices on other markets, disposing of remaining stock etc. Multilateral agreements and global allocations now, however, tend to guide exports into channels in keeping with cyclical trends.

Apart from the above stated trade-political restrictions already considered, timber export in many countries has sometimes been hampered by export taxes. As an example, the following taxes were levied in Finland from 1 January 1952:

Hewn coniferous wood	1 100 mk	m^3
Pulpwood and pitprops	200 »	per piled m^3
Other raw wood	8 »	per cubic feet
Coniferous sawnwood	2 000 »	per stds

At the time, these taxes represented 5—6 % of the FOB price of raw wood and 3—4 % of that of sawn goods. The funds so collected were split fifty-fifty to be used for keeping down home-prices and to be paid back to suppliers as subsidies when the market situation became less favourable.[1] The idea was to level the high prices prevalent during the Korea war. As appeared in the market survey, the taxes were imposed somewhat too late, because prices were already falling considerably during 1952, and in 1953 these taxes had to be abolished as a result of the low price level. A corresponding price compensation tax was also introduced when the Finnmark was devalued in 1957 in order to level out the sudden increase in the incomes of the forest owners and the wood industries. These taxes were reduced in stages and finally abolished a year later. In 1951, Sweden also introduced an export tax for sawn goods, and from 1 January 1952 extended this to include all raw-wood exports. This tax was motivated as a business cycle equlization charge.

Export taxes are an internal economic matter and are thus not counted as trade-politics. Naturally, though, a high export tax affects the trade volume. Whether this in fact increases supplies on the home market or not is uncertain seeing that forest owners may well try to wait for better times. All the same, if it is desired to limit exports of raw wood, export taxes seem to be a much simpler method than licence permits or other restrictions. Export taxes are, as stated, a purely internal matter and do not concern foreign buyers. A purchase is dependent solely on prices, and there is no factor that either the buyer or seller cannot freely survey. Further, the funds collected in this way can be put to use for the benefit of forestry.

However, as both EEC and EFTA prohibit the use of export taxes it does not appear as though they will be popular in the near future. At present, no country in W. Europe applies export taxes of this kind. If Finland does not join EFTA, this tactic can be recommended as the least disagreeable one should it be necessary to restrict raw-wood exports in order to maintain the wood balance.

[1] With mild surprise, one can note that the funds have in fact been repaid.

It is hard to tell to what degree post-war trade restrictions in Europe have affected the trade-volume. On comparing 1950—52, 1957—59 and the prewar years of 1936—38, we arrive at the following figures for the exports of the most important raw-wood groups.

Table 57. Exports of logs, pulpwood and pitprops in Europe, in 1 000 m^3. Yearly average 1936—38, 1950—52 and 1957—59.

Taulukko 57. Tukkien, paperipuun ja kaivospuun vienti Euroopan maista. Vuotuiset keskiarvot vv. 1936—38, 1950—52 ja 1957—59, 1 000 m^3.

	1936—38	1950—52	1957—59
Coniferous logs — *Havutukit*	959	1 130	862
Broadleaved logs — *Lehtipuutukit*	289	504	670
Pulpwood — *Paperipuu*	1 528	3 729	4 586
Pitprops — *Kaivospuu*	3 730	2 981	2 551
Total — *Yhteensä*	6 506	8 344	8 669

The corresponding figures for imports are as follows:

Table 58. Imports of logs, pulpwood and pitprops in Europe in 1 000 m^3. Yearly average 1936—38, 1950—52 and 1957—59.

Taulukko 58. Tukkien, paperipuun ja kaivospuun tuonti Euroopan maihin. Vuotuiset keskiarvot vv. 1936—38, 1950—52 ja 1957—59, 1 000 m^3.

	1936—38	1950—52	1957—59
Coniferous logs — *Havutukit*	2 307	1 156	1 812
Broadleaved logs — *Lehtipuutukit*	1 165	1 516	3 351
Pulpwood — *Paperipuu*	5 360	4 301	5 796
Pitprops — *Kaivospuu*	8 086	3 370	3 175
Total — *Yhteensä*	16 918	10 343	14 134

A comparison with pre-war times discloses that the export of coniferous logs has not kept pace with the development of the production capacity of the sawmill industry. Only France and Belgium present somewhat higher export figures after the second world war than before.

Austria was of great importance in raw-wood exports prior to the war. The great expansion of the sawmill industry, however, has in the meantime created a large-scale home consumption of sawlogs, and it is doubtful, therefore, whether exports would be likely to increase even with the restoration of free trade. Export figures in the whole of Europe displayed a falling trend during the course of the 1950's even though restrictions were far more severe during the first half of this decade than during the latter.

Import, too, shows a distinct fall from the 1936—38 figures. A considerable recovery, however, could be observed during the 1950's — due possibly to the relaxation of restrictions.

As regards broadleaved logs an increase in both exports and imports can be noted. Changes in the export figures, however, are rather small. France alone has trebled her exports since the second world war also displaying a distinct increase during the 1950's. On the other hand, imports have risen in almost all European countries. As we have seen earlier this increase is mainly due to bigger imports from overseas.

The pulwood trade has changed above all in that Europe before the war imported the bulk from non-European countries, whereas during the 1950's this particular trade has become more internally European. Exports have risen but imports have not kept pace at all with developments within the pulp industry since before the war.

Pitprop imports show a considerable decline since the 1930's, due to the fall in consumption.

These figures do not indicate that restrictions have had a paralyzing effect on the trade volume. It is true that imports of broadleaved logs to Europe were doubled during the 1950's which could be put down to the relaxation of restrictions. At the same time, however, imports to the U.K. have remained unchanged despite the fact that import restrictions in that country were abolished at the beginning of the decade.

France has similarly managed to increase her exports of coniferous timber during the same period in spite of strict controls. In the case of Finland we were also able to see that permits refused formed an insignificant part of the total exports. It appears that controls have generally been adapted to the real need. It is certain, however, that restrictions have contributed to the considerable fluctuations that have taken place in the raw-wood trade. They have created a sense of insecurity among buyers, since the latter have been unable to forecast the real import possibilities. Furthermore, without a single doubt, restrictions have succeeded in complicating the timber trade. One willingly agrees with OEEC (1956 p. 104) when they write: »Unrestricted trade and free competition are necessary factors in a stable and prosperous timber market.»

63. General views

The influence of political economy and trade policy upon the timber trade is characterized by the following two factors:

1. Each country tries to process as much of its own wood as possible, thus diminishing raw-wood exports.
2. Industries in the import countries need raw wood. Therefore their sales

of important goods are made dependent on their receiving a sufficient import of raw wood.

These two trends are obviously in opposition to each other. The fundamental idea of the European Common markets is without doubt to increase opportunities for specialization and concentrate on the production of special goods in places that possess the largest natural resources for the purpose. The resulting rationalization of production should lead to a general rise in the standard of living. The logical consequence of this is the continued concentration of the wood industry in export countries with an uninterrupted development of processing raw wood on the spot. Regarding the above, STJERNSCHANTZ (1958 b p. 70) writes as follows: »Toiselta puolen avaisi liittyminen vapaakauppa-alueeseen parempia näköaloja metsätuotteittemme markkinoinnissa, koska metsäteollisuuden jalostusastetta voitaisiin silloin nostaa.» (*On the other hand, the joining of the free trade area would open up a better aspect for the marketing of our forest products, as the refining degree of the wood industry could be raised.*) The old saying that it is good business to buy where the goods are cheapest and sell where the best price can be obtained seems at last to be gaining acceptance.

It is wrong, however, to think that import countries stand no chance of competing. As an example we can consider the increase in newsprint production during the 1950's in a number of important export and import countries, which gives the following figures:

Table 59. The increase in newsprint production in some countries 1950—59, in 1 000 tons.
Taulukko 59. Sanomalehtipaperin tuotannon kasvu eräissä maissa vv. 1950—59, 1 000 tonnia.

	1950 1 000 tons *1 000 tonnia*	1959 1 000 tons *1 000 tonnia*	Increase % *Lisäys %*
Finland	420	650	55
Sweden	325	506	56
Norway	165	204	24
W. Germany	170	243	43
France	305	529	73
United Kingdom	553	680	23
Italy	92	217	136

Finland's and Sweden's production of newsprint has gone up by 55 and 56 %, while simultaneously countries like France and W. Germany, where the import of newsprint is duty-free, have increased their production by 73 and 43 %. Thus it seems as if the wood industries of the import countries have no need to fear any revolutionary changes due to the common market zones. Also Mantel (1959 p. 8) writes on this subject: »Für die deutsche Holzwirtschaft ergeben sich, wenn auch

in scharfer Konkurrenz, gute Exportaussichten auf dem erweiterten Gemeinsamen Markt.» For fair competition, however, import countries should have the right to purchase freely on the European raw-wood market.

The following tables have been compiled to give a clearer view of forest resources and the raw-wood situation in the common market zones:

Table 60. Forest resources and fellings in the EEC countries.

Taulukko 60. EEC-maiden metsävarat ja hakkuut.

	Forest area million ha *Metsäala milj. ha*	% of total area *% koko maa-alasta*	Ha per capita *Ha asukasta kohden*	% of coniferous *Havupuut %*	Av. fellings 1950—59 million m³ *Kesk. hakkuut 1950—59 milj. m³*
Belgium	0.6	20	0.07	35	2.2
France	11.6	21	0.30	31	31.0
W. Germany	7.0	29	0.13	69	24.1
Italy	5.8	20	0.12	20	15.5
Luxembourg	0.1	33	0.30	22	0.2
Netherlands	0.3	7	0.02	71	0.7
Total — *Yhteensä*	25.4	—	—	—	73.7

The distribution of forest ownership can be noted from the following figures:

Table 61. Distribution of forest ownership in the EEC countries in %.

Taulukko 61. Metsämaan omistussuhteet EEC-maissa, %.

	Publicly owned forests *Julkist. yhdysk. metsät*		Private forests *Yksityiset metsät*
	State *Valtio*	Other *Muut*	
Belgium	10	35	55
France	17	20	63
W. Germany	31	27	42
Italy	3	35	62
Luxembourg	5	35	60
Netherlands	15	15	70

Of the 25 million ha of forest within the EEC, 14.5 million ha are privately owned, the number of owners being 3 million. As previously stated, France has the largest forest areas, but 50 % of French and Italian forests are in a low to middling state and yields are poor. W. Germany, with nearly 70 % coniferous forest, has the best-managed forests in the EEC. W. German trade in industrial wood is double that of France and Italy combined. It can however be anticipated

that the pulp industries in these countries will soon be utilizing waste-wood that until now has mainly been consumed as fuelwood.

The situation in the EFTA countries appears as follows:

Table 62. Forest resources and fellings in the EFTA countries and Finland.

Taulukko 62. EFTA-maiden ja Suomen metsävarat ja hakkuut.

	Forest area million ha *Metsäala milj. ha*	% of total area *% koko maa-alasta*	Ha per capita *Ha asukasta kohden*	% of conifers *Havupuut %*	Av. fellings 1950—59 million m³ *Kesk. hakkuut 1950—59 milj. m³*
Austria	3.4	41	0.50	78	10.3
Denmark	0.4	10	0.10	51	1.8
Norway	7.5	24	2.30	83	9.2
Portugal	2.6	29	0.30	49	4.6
Sweden	23.0	56	3.20	87	39.6
Switzerland	1.0	24	0.19	80	3.7
United Kingdom	1.6	7	0.03	41	3.2
Total — *Yhteensä*	39.5	—	—	—	72.4
Finland	21.7	72	5.30	85	43.5

The distribution of forest ownership is shown in the following table:

Table 63. Distribution of forest ownership in the EFTA countries and Finland in %.

Taulukko 63. Metsämaan omistussuhteet EFTA-maissa ja Suomessa, %.

	Publicly owned forests *Julkist. yhdysk. metsät*			Private forests *Yksityiset metsät*		
	State *Valtio*		Other *Muut*	Company owned *Yhtiöt*		Other *Muut*
Austria	19		8	→	73	←
Denmark	28		4	→	68	←
Norway	13		6	9		72
Portugal	→	8	←	→	92	←
Sweden	18		7	25		50
Switzerland	5		65	2		28
United Kingdom	→	31	←	→	69	←
Finland	29		2	7		62

By using the figures in Table 23 and comparing the raw-wood trade in the EEC and EFTA countries during the 1950's, we arrive at the following:

Table 64. Raw-wood trade in EEC and EFTA countries in 1 000 m³. Annual average 1950—59.

Taulukko 64. EEC- ja EFTA-maiden vuotuinen keskimääräinen raakapuun kauppa vv. 1950—59, 1 000 m³.

	Exports *Vienti*	Imports *Tuonti*	Balance *Erotus*
Belgium—Luxembourg	315	730	— 415
France	1 177	1 156	+ 21
W. Germany	274	3 515	— 3 241
Italy	6	1 629	— 1 623
Netherlands	8	840	— 832
Total — *Yhteensä*	1 780	7 870	— 6 090
Austria	338	117	+ 221
Denmark	38	75	— 37
Norway	489	523	— 34
Portugal	180	34	+ 146
Sweden	1 153	756	+ 397
Switzerland	39	636	— 597
United Kingdom	9	2 779	— 2 770
Total — *Yhteensä*	2 246	4 920	— 2 674
Finland	4 222	14	+ 4 208

Both groups display large deficits in their balances, which totalled 8.8 million m³ annually during the 1950's. If Finland is included in the EFTA group, the latter attains a surplus of 1.5 million m³. The combined EEC and EFTA deficit is not, however, covered by the Finnish surplus. It is evident, therefore, that if the raw-wood trade continues its present trend, the common market zones will be dependent upon imports from elsewhere.

Trade in all wood-industry products in the two common market zones is as seen overleaf (according to SPEER 1960 p. 6).

The EEC countries display a substantial annual decifit balance of 27.5 million m³. There can be no disagreement with the statement that: »Avec certitude toutefois on pourra s'attendre à ce que, dans le territoire de la Communauté Economique Européenne, avec sa zone de libre échange, une offre excédente de bois ne se produira pas.» (OEDEKOVEN 1959 p. 122).

It can be noted that W. Germany's import requirements are the largest, and this state of affairs will increase rather than the reverse, while the pulpwood demand of France and Belgium is growing and frontier trade increases. This will certainly result in somewhat increased raw-wood exports from W. Germany. No direct change in W. Germany's imports has so far been caused by the EEC. As previously stated, however, certain restrictions on the export of coniferous wood had been in force for a long time. W. Germany has anticipated EEC by

Table 65. Trade in all wood products in EEC and EFTA countries in 1 000 m³. Annual average 1953—58.

Taulukko 65. EEC- ja EFTA-maiden kaikkien metsäntuotteiden kauppa. Vuotuinen keskiarvo 1953—58, 1 000 m³.

	Exports *Vienti*	Imports *Tuonti*	Balance *Erotus*
Belgium—Luxembourg	743	3 395	— 2 652
France	3 656	5 639	— 1 983
W. Germany	1 179	13 004	— 11 825
Italy	153	6 704	— 6 551
Netherlands	1 201	5 718	— 4 518
Total — *Yhteensä*	6 932	34 461	— 27 529
Austria	7 462	209	+ 7 253
Denmark	33	2 094	— 2 061
Norway	4 079	621	+ 3 458
Portugal	389	238	+ 151
Sweden	23 348	657	+ 22 691
Switzerland	101	1 346	— 1 245
United Kingdom	808	28 471	— 27 663
Total — *Yhteensä*	36 220	33 636	+ 2 584
Finland	19 484	12	+ 19 473

abolishing these restrictions in 1960. There is hardly any reason to fear a glut of coniferous timber on the W. German frontier. The freeing of trade, however, should lead to increased broadleaved timber exports from France to W. Germany owing to the high level maintained by W. German prices. In particular, oak- and poplar-trade in both directions can be expected to increase on the frontier in the course of time. No important changes in the raw-wood trade between the EEC countries can be foreseen, however. Their internal annual trade has been approximately 400 000 m³ lately, Italy's share being 25 %. Up to now, W. Germany has imported mainly from countries outside the EEC, and it therefore seems unlikely that an external duty could be of any benefit for the W. German timber market.

As regards tropical woods, France and Belgium both demanded that the EEC countries should impose an external duty on tropical timber so as to assist imports from their own African dependencies and trade associates. W. Germany would have preferred to impose an external duty on all tropical woods irrespective of their country of origin, in order to protect their own beech forests. The 5 % external duty that has been approved, however, is too low to represent any threat to imports from any sources of tropical wood species, the use of which is more a matter of fashion and taste. Export countries not bound by agreement can anyhow nullify the effect of such duties by means of export subsidies. The only true difference that can be made is economic and financial. There seems

no particular cause for anxiety for the W. German home market as the entire import of tropical woods has been duty-free. During the near future, one can mainly expect a concentration of purchases on the French and Belgian dependencies and trade associates.

Within the EFTA Group, the U.K. shows the largest negative balance, and as long as only the raw-wood trade is taken into consideration, Switzerland also displays a considerable deficit in its timber balance. As seen above, the EFTA group shows a negative balance of nearly 2.7 million m³. But if all wood-industry production is taken into consideration, the resulting balance is positive as a result of Sweden's and Austria's large surpluses of processed products. However this surplus does not exceed 2.6 million m³ unless Finland enters the picture, in which case it rises to nearly 22 million m³.

For the EFTA countries, the most significant change will be that products of the wood industries will be admitted into the U.K. free of duty. This will probably result in a 10—20 % change in prices. Either the British producers will be obliged to reduce their prices, or the duty-reductions will be used by the export countries for the benefit of their wood industries and forest management. The U.K. home industries producing finer qualities of paper have enjoyed a considerable tariff protection in the past, as can be seen from Table 56 on p. 140. It can be anticipated that free-trade will somewhat paralyze further development and indirectly curtail the demand for pulpwood. It must however be observed that the large import items of pulp and newsprint have been free of duty previously. Here it may be of interest to add, that establishment costs for pulp and paper plants within the import countries will fall considerably as soon as they can obtain their machinery from their respective free-trade areas. Up to now, for instance, the U.K. has applied a 17.5 % duty on machinery of this kind.

Also the British sawmill and joinery industries may suffer as a result of free trade. The trade journal »Wood» (1960 No. 4 p. 175) writes: »It seems likely that E.F.T.A. will have an adverse effect on the sawmilling and joinery branches of the trade, which cannot be offset unless some form of association with the Common Market is brought about.» In regard to sawn goods, this will affect planed goods above all else, as the protective duty for this article has been comparatively high. For ordinary sawn timber the change will be insignificant (cf. Table 55 p. 139).

As long as Finland refrains from joining EFTA, it seems that Sweden will gain the most benefit. The Swedish plywood industry should be able to outstrip Finland (cf. TTJ 16 July 1960, p. 59). Similarly it may be possible for Sweden to take over most of the British wallboard market. Both Norway and Sweden can be expected to increase their exports of planed boards and manufactured wood-goods such as doors, furniture and other joinery products. These changes are hardly expected to have any particular influence on the raw-wood trade.

Of special importance for the wood industry and raw-wood trade is the stipulation in EEC and EFTA that aliens have the same right to establish themselves in a country as the country's own nationals. In other words, it can be expected that the forest industries of the import countries will endeavour to become forest owners in the export countries or to establish plants for semi-manufactures. In particular, British paper companies will probably establish themselves in Scandinavia for the simple reason that paper production costs in the U.K. exceed those of Scandinavia by at least 10 %.

On the other hand, all sorts of other possible combinations may arise, at least where broader international aspects are concerned. Pulp and Paper International (July 1960 p. 21) states: »There are also reports that one very prominent American paper company and also a well known Canadian company plan to enter the Common Market with new paper mills in France.» Another example is Bowaters of Great Britain, which has purchased the majority of shares in a company that holds stock in a number of large French paper factories and even in a Canadian pulp and wood sales company. It appears that this part of the wood industry at least will become increasingly international. It is hard to foretell what effect this will have on the raw-wood trade, but it can be anticipated that it will diminish the trade volume.

When all import and export restrictions are abolished a co-ordination of raw-wood prices can be expected. Differences will then be due only to dissimilarity of transport costs. »Es ist aber klar, . . . dass sich das Preisniveau im gesamten EWGRaum zunehmend vereinheitlichen wird.» (IH 1960 No. 14 p. 4). A similar condition would probably prevail between the Nordic countries.

From the figures presented, it can clearly be seen that a commercial war between the free-trade zones would have catastrophic consequences. The EEC countries' natural sources for the purchase of wood are the exporting countries of EFTA. It must be pointed out that Finland here occupies a key position. Without imports from Finland, the EEC zone's timber supplies must be reorganized. The overall picture undergoes no decisive change if imports from the East bloc and non-European suppliers are taken into consideration. For a natural timber balance in Europe, free exchange of wood between EEC and EFTA is essential. It would be a great advantage also if all customs obstacles and, particularly, all import and export prohibitions between these zones were abolished.

Speer (1960 p. 3) writes as follows: »Die Beseitigung jeder Art von Ausfuhrkontingenten beim Rohstoff Holz und jeder Art von Wettbewerbsverfälschung durch Steuern, Doppelpreise, Monopole, staatliche Interventionen aller Art usf . . . ist die Voraussetzung für eine marktgerechte Assoziierung.» Valtermann also states (1959 p. 7)» die Wirtschaftliche Spaltung zwischen EWG und EFTA, nicht Zuletzt das Zurückdrängen von anderen, Traditionsgemäss wichtigen Holzimport-Drittländern wurde bei der gegebenen Situation zu wirtschaftlich untragbaren Verhältnisse führen.»

It may, however, be necessary to subordinate forestry policy within the EEC to more far-reaching political considerations, and it is clear that, should this be the case, the W. German forests will have to carry the heaviest burden (cf. MANTEL 1958 c p. 2).

If in spite of everything, it comes to a trade war between the two groups, both would probably be faced by similar problems of re-organization. The EFTA countries would have to work hard to push their wood industry products on to farther-away markets. The EEC would also certainly have to turn eastward in order to eke out their shortages of material. Under no conditions can the overseas countries deliver enough coniferous wood to cover the deficit. Whether the East bloc would suddenly be able to compensate for the deliveries of previous exporters in the same variety and quantity seems doubtful. It is obvious that raw-wood prices within the EEC zone would rise considerably, thus prompting fresh endeavours to increase raw-wood imports. This might lead to increasing competition to obtain Finnish raw-wood supplies. The external duties now imposed by the EEC countries are not so high as to prevent trade but in case a trade war were to break out, other more severe restrictions can be expected.

On the whole EEC and EFTA oppose each other on the subject of tariffs. EFTA wants exemption from duty on all products including the more highly processed, while EEC can only accept this on terms that ensure that the supply of the raw material is free. Special problems are created by countries with a low price level, fluctuating rates of exchange and other complications. This mainly applies to the East bloc countries. They call for basic decisions of principle which can later be applied to the wood industry.

Even if it is impossible to instil total co-operation between EEC and EFTA it should still be possible to establish co-operation as far as trade in wood products is concerned. No really sharp differences of view seem to exist in this respect. Quite the reverse, the figures given above make it plain that the two groups are to a high degree dependent on each other; EEC needs EFTA's (including Finland's) export surplus. European wood industries have often in the past established co-operation on a wide scale, even if it has been limited up to now to controlling or restricting prices and production. The most recent example on this is the European Federation of Associations of Chipboard Manufacturers, founded in 1958 and representing all groups in W. European countries. This Federation has firmly established itself quite regardless of national frontiers and interests. In fact, the Timber Trade Journal writes (9 July 1960, p. 55): »In this respect, the Federation appears to be displaying an amateur statesmanship which many would think might profitably be adopted by the professional statesmen of Europe!»

Even though free-trade zoning is just beginning, practical results are already

visible. Finland, for instance, has already been obliged to reduce prices for her manufactured products in order to maintain her position in relation to the EFTA countries. Austria is obliged to pay a 25 % duty on her hardboard exports to Italy, while the EEC countries pay a mere 16 %. Similar differences can be noted for all forest products, though naturally the lower the original duty-protection, the smaller the difference. Finland's trade with the free-trade zone countries is shown in the following tables (cf. KARA 1960 p. 31):

Table 66. Finnish foreign trade 1958—59 by trade zones, in 1 000 millions of marks and %.

Taulukko 66. Suomen ulkomaankaupan jakaantuminen kaupallisten ryhmittymien mukaan vv. 1958—59, milj. mk. ja %.

	Import — *Tuonti*				Export — *Vienti*			
	1958		1959		1958		1959	
	1 000 mill.	%	1 000 mill.	%	1 000 mill.	%	1 000 mill.	%
EFTA	62.7	26.9	76.6	28.7	75.2	30.3	83.5	31.2
EEC	68.4	29.3	83.6	31.3	66.6	26.9	70.8	26.5
East bloc — *Itäryhmä*	59.9	25.7	66.4	24.9	61.6	24.9	62.7	23.5
Other countries — *Muut maat*	42.3	18.1	40.2	15.1	44.5	17.9	50.2	18.8
Total — *Yhteensä*	233.3	100.0	266.8	100.0	247.9	100.0	267.2	100.0

The following is a corresponding table for wood products only:

Table 67. Finnish exports of wood products 1958—59, in 1 000 million of marks.

Taulukko 67. Suomen metsätuotteiden vienti vv. 1958—59, 1 000 milj. mk.

	EFTA		EEC		East bloc *Itäryhmä*		Others *Muut*		Total *Yhteensä*		EFTA % of total *EFTA:n osuus %*	
	1958	1959	1958	1959	1958	1959	1958	1959	1958	1959	1958	1959
Raw wood — *Raakapuu* ..	5.2	5.3	9.0	8.5	3.2	1.8	1.3	0.4	18.7	16.0	28	33
Sawn goods — *Sahatavara*	20.7	24.9	13.0	15.1	3.9	2.0	4.8	4.7	42.4	46.7	49	53
Pulp prod. — *Puuvanuket.*	16.8	16.7	15.3	14.3	8.8	6.8	8.2	10.5	49.1	48.3	34	35
Plywood — *Vaneri*	6.5	7.4	1.3	1.4	0.3	0.3	1.7	2.2	9.8	11.3	66	65
Board — *Levyt*	2.0	2.7	2.3	2.8	3.5	2.4	1.8	1.8	9.6	9.7	21	28
Newsprint — *Sanomal. p.*	6.9	5.9	5.5	4.8	0.6	0.8	11.7	12.2	24.7	23.7	28	25
Other paper — *Muu paperi*	5.2	6.1	9.5	12.5	9.1	7.7	9.0	9.1	32.8	35.4	16	17
Other prod. — *Muut tuotteet*	11.9	14.5	10.7	11.4	32.2	40.9	6.0	9.3	60.8	76.1	20	19
Total — *Yhteensä*	75.2	83.5	66.6	70.8	61.6	62.7	44.5	50.2	247.9	267.2	30	31

On further distributing raw-wood groups according to the different kinds of item we obtain the following figures:

Table 68. Finnish raw-wood exports by trade zones in 1 000 m³. Annual average 1950—59.
Taulukko 68. Suomen raakapuun vuotuisen keskimääräisen viennin jakaantuminen kaupallisten ryhmittymien mukaan vv. 1950—59, 1 000 m³.

	EEC	EFTA	USSR	Rest of East bloc *Muut itäryhmän maat*
Coniferous logs — *Havutukit*	31.2	253.3	3.1	1.6
Broadleaved logs — *Lehtipuutukit*	21.6	25.3	—	—
Pulpwood — *Paperipuu*	1 356.9	558.7	281.8	162.5
Pitprops — *Kaivospuu*	410.7	540.8	0.3	83.4
Sleepers — *Ratapölkyt*	5.3	2.6	0.3	2.8
Total — *Yhteensä*	1 825.7	1 380.7	285.5	250.3

Finland's most important trade contacts for manufactured timber products are, as can be seen, in the EFTA group, while EEC countries are of greater importance for the country's raw-wood exports, though this in fact only applies to pulpwood. EFTA is still the most important zone for exports of coniferous and broadleaved sawlogs and pitprops. No expansion of trade in wood products with the Soviet Union can be expected. SÖDERHJELM writes (1957 p. 83): »Trähusexportens öde kan vilken dag som helst drabba vilken bransch av skogsindustri som helst.» (*The fate of prefabricated houses can any day strike any branch of the wood industry.*) This is quite natural if one considers the development of Soviet forestry dealt with in an earlier chapter. It is unlikely that any export of wood goods can be expected eastwards. A certain frontier trade, however, is natural in view of the direction of flow of the waterways and the corresponding timber floating possibilities. As the tables showed, only the pulpwood exports were of any importance on the Russian market during the 1950's.

Of the non-Soviet East bloc countries, Hungary and E. Germany were the most important buyers, as the market survey indicated. This trade is natural, seeing that Hungary in particular is heavily dependent on wood imports.

The earlier analysis of customs tariffs made it clear that they are not a decisive factor for the continuation of Finland's raw-wood export either to the EEC or the EFTA zone. External duties within EEC will remain comparatively low and the import countries in EFTA have already granted exemption from duty to a large extent. On the other hand, greater difficulties may arise through the quantity restrictions that the free-trade countries can impose at will on countries not belonging to the zones. As long as Finland does not participate as an ordinary member in OEEC either, she will clearly lose ground as regards trade-policy.

As for the wood industry, Finland's position is far more unfavourable. Finland

will without a doubt be obliged to reduce her prices in proportion to the exemptions from duty practised between the EFTA countries. What this may mean in terms of lost national income can be calculated in different ways. The main problem will however not be the price reductions but dwindling trade connections.

Various branches of the industry will suffer more or less badly. The plywood and sawmill industries are seen to be most dependent on EFTA countries. Fortunately enough, the duty on sawn goods sold on the vital British market is fairly reasonable (8 s. per stds) but the situation is far worse for the plywood industry. The group »other paper» which, it is true, is only 17 % dependent on the EFTA group, is subject to the highest duties with the result that it will suffer the highest price reductions. As the tariff reductions are to be spread out over a period of several years the pressure on price will build up fairly slowly and only become decisive in about 5 years' time. Finland's wood industry will therefore suffer no immediate catastrophe if Finland stays out of EFTA, but the situation is likely to continue to deteriorate. As already stated, the two common market zones may well establish co-operation sooner or later, a fact that will make the situation for those not belonging to either group still more difficult. The fact that since they established their customs union in 1948, the Benelux countries have trebled their commercial exchanges, should give further food for thought. Trade between the zone countries will inevitably grow faster than that with countries outside the zones. In the long run it will certainly be a serious blow to the Finnish wood industry if Finland remains outside EFTA. To draw the conclusion that the country would sink to the level of, say, mere raw-wood merchants seems however to be exaggerated. Probably Finland can continue to export the products of her wood industry on the world market as long as prices are kept low enough. A general reduction in stump prices can however scarcely be avoided. Raw-wood export must be restricted in some way, as foreign buyers are likely to be able to pay higher prices than the home industries.

Since the Finnish wood industries still earn the country over 80 % of its total export revenue and as membership of EFTA would obviously be very favourable for this industry, Finland should join EFTA regardless of the possible disadvantages to other branches of industry.

There appears to be no absolute obstacle to joining EFTA. Trade with the East bloc is evidently the sore spot. As long as EFTA is a purely free-trade zone without common external duties, Finland can in theory offer USSR the same tariff advantages as prevail within the EFTA countries. However, according to the GATT agreement this entails giving them to all GATT countries, with obvious results. In view of latest available information it looks as if some form of solution will be worked out. If the decision is to be dictated by foreign policy alone, it may well be asked whether Finland can still be regarded as an independent state.

Austria, like Finland, is in a very difficult position due to the fact that her most vital markets are in the EEC area, while for political reasons she has been

obliged to join EFTA. Over 90 % of her wood exports are directed to the EEC countries and only some 2 % remain within EFTA. Austria's natural timber markets are indubitably Italy and W. Germany. The Swiss market, though well situated, is comparatively small. Austria finds it hard to compete in the U.K., as transport costs are too high.

Austria's final hope is that co-operation between the free-trade groups will rescue the situation. NEMNSCHAK (1959 p. 1) considers that Austria should also seek membership in EEC. Paragraph 268 in the EEC agreement and Paragraph 39 in EFTA give members full freedom to associate with a third country or international state alliance and double membership is therefore quite possible. It is plausible that EEC would welcome Austria's entry.

Before the war Switzerland imported approx. 90 000 m³ of pulpwood and 60 000 m³ of other coniferous timber annually from Austria. Owing to the severe restrictions that Austria has applied, practically nothing has been exported since the war. Under the EFTA agreement, Austria may prohibit exports only on military, strategical or health considerations. However, Austria has succeeded in forcing a special agreement contrary to Paragraph 11 of the EFTA agreement, permitting her until 1 January 1962 to maintain exports of coniferous wood at the same quota volumes as hitherto. After 1962, the export prohibitions will be reduced up to 1970 at the same rate as tariffs are reduced. This, however, would only apply to EEC member, if the trade zones reach a mutual agreement. All the other EFTA countries agreed to Austria's special clause with the exception of Switzerland, and Austria was obliged to come to an agreement with the latter country on a bilateral basis. In July 1960 Austria and Switzerland negotiated on this question without result. Switzerland demanded that Austria should release considerable quantities of coniferous wood before she would permit her any tariff reductions.

Austria seems most unwilling entirely to free her raw-wood export. This is quite comprehensible in view of the State's forest survey figures. As long as such is the case, the other EFTA countries can demand compensation. The Swiss paper industry, incidentally, fears that the EFTA export countries will render it totally uncompetitive and feels that the special clause should be applied (cf. IH 1959 No. 22 p. 1). Relations between Switzerland and Austria have, on the whole, been somewhat strained since Austria clamped down on exports of coniferous logs. Swiss sawmills on the frontier generally used to draw their raw-material from the Austrian side of the border. The situation has reached a deadlock as Austria will not permit the export of raw wood unless Switzerland abolishes its high duty on sawn goods. As soon as all restrictions between these countries are abolished considerable changes in Austria's exports can be expected.

Raw-wood export prices vary somewhat depending upon the route of transport within the country unless they are levelled out by means of controls. The aim is to co-ordinate and reduce freights within the EEC countries. Among other

things, experiments are being made to introduce new types of railway wagons so as to facilitate loading and unloading. By standardizing transport conditions timber-carrying can surely be made both easier and cheaper. Here the W. German railway freights hold a key-position. This may lead to Austria being able to compete successfully with Swedish and Finnish timber in Northern W. Germany in spite of Italy being Austria's natural market. On the other hand, Austria's entire wood export has to be transported overland. The Nordic countries can send goods by sea, this being the cheaper way so far. The extension of the canal network in Central Europe should, in particular, facilitate exports from the North. It is thus possible to transport raw wood along the Rhine right up to Basle and to Aussig in Czechoslovakia and Budapest in Hungary. Swiss purchases of pulpwood from Finland reveal the importance of these waterways. Here it can be added that some of the East bloc's raw wood goes as transit freight over the Austrian and W. German railway systems to the neighbouring countries. Theoretically it would undoubtedly be profitable for W. Germany and Austria to process this timber further within their own borders. These deliveries, however, are consigned to other countries, thus excluding the possibility of competition. The Austrian railway freightage policy greatly affects the profitability of the raw-wood export. »As is well known, prices of the different categories of timber in Austria vary considerably from one region to another.» (Timber statistics for Europe 1955 No. 2 p. 24). Raw-timber for export under 2.5 metres in length has been going as low rate class F whereas timber of over 2.5 metres length has been quoted at class E rates. Under a proposed rates increase, timber-freightage is estimated to rise by approximately 15 %. Furthermore all raw wood is to be treated as sawn goods according to the class E rates. This would mainly affect the export of pitprops and poles. Due to its weight, all raw-wood is anyhow in an unfavourable position as far as freights go. If the proposed changes are carried through, raw-wood exports from Austria will become even more difficult.

It seems however possible nowadays to transport raw wood for considerable distances by lorry without making it uneconomical. For instance, sawlogs have been transported from Kuusamo in Finland to Sweden, over a total of 450 kilometres of road.

Transport conditions in the Nordic countries are also decisive. It seems that it is more difficult to rationalize logging in these countries since the removal per ha is usually smaller than in more southerly countries and transport routes are long. In regard to Finnish circumstances PALOHEIMO (1958 p. 144) is of the opinion that »Etelä-Pohjanmaalla on ilmeisesti puuta, jolle nykyisten kuljetusolosuhteiden vallitessa vienti muodostaa luonnollisimman menekin.» (*In South-Ostrobothnia there is apparently wood, for which export is the most natural solution in view of prevailing transport conditions.*) As regards Finnish exports to Sweden it can be stated that the N. Finnish industry only processes 50 % into fibre-goods

whereas the N. Swedish processes 90 %. On the other hand, S. Finland provides over 80 % of the pulpwood export.

It is hard to foretell how far trade-politics and business considerations will lead to Sweden maintaining her raw-wood exports. The border trade with Norway can be considered natural but on the whole it can be stated that »Som bekant arbetar krafter för att på allt sätt begränsa exporten av rundvirke till förmån för den inhemska industrin.» (*As is known, forces work to limit the export of round wood for the benefit of the home industry.*) (STT 1955 p. 44). Similar trends are naturally to be found in all export countries. As for sales methods in Finland, LAAKSONEN (1958 p. 159) states: »Hankintakaupoilla myydyn raakapuun määrä on viimeisten 10 vuoden aikana noussut 4.9 %:sta 27.5 %:iin laskettuna vuotuisista kokonaishankintamääristä.» (*The quantity of delivery sales contracted for raw wood has during the last 10 years risen from 4.9 % to 27.5 % as calculated from the annual total fellings.*) It seems likely that raw wood that has been purchased for delivery lands easier on the international market.

Quite apart from trade-political points of view on raw-wood exports, there are a number of purely economic facts. The pulp industry is obliged for safety's sake to keep a large enough stock to ensure full production. As previously mentioned, full capacity can seldom be utilized, so sometimes the stock must be sold to prevent it from becoming over-aged. Furthermore, the companies consider themselves under an obligation towards their sources of supply, and always try to maintain business connections, even at times when no direct need for raw-material exists. This leads to situations in which companies find it more favourable to put raw wood up for export. In the sawmill industry similar situations occur when firms buy timber on the stump, and after felling get a surplus of piled wood. A situation may arise in which a sulphite factory procuring supplies has been obliged simultaneously to purchase a lot of pine-wood, and so on. All this without doubt leads to situations in which selling for export is the easiest solution to the problem. If no restrictions on the raw-wood trade exist, the above factors can be expected to lead to exports even if this is undesirable from the point of view of the wood balance. On the whole it should be expected that international price levels will become decisive as soon as free-trade gains ground.

7. Summary and conclusions

In the introduction, we noted that a surprisingly large trade in raw-wood reappeared in Europe after the second world war, instead of each country making an effort to refine her own wood products. On analysis of the capacity and structure of this trade, it proved to be still more complicated than appeared to be the case on the surface. Thus there is also a large trade in raw wood between countries with a surplus of forest products; furthermore, several countries appeared both as exporters and importers.

In Tables 7—13 pp. 26—33 European exports have mainly been illustrated according to the statistical figures published by FAO. The statistics have been concentrated to cover the 1950's. In Table 14 p. 33 a summary was made from which it could be noted that during the previous decade the European countries exported an average of 11 million m³ raw wood annually. Of this amount, no less than 4.3 million m³ was pulpwood, without doubt the most important group. Then followed the export of pitprops (2.8 million m³). The corresponding import analysis is to be found in Tables 16—22 on pp. 35—41. In Table 23 p. 42 we can study the results of an import-export analysis of the different countries. Finland leads exports during the 1950's with a yearly average of 4.2 million m³, or about as much as all the other W. European countries together. If we examine the export figures alone, we are surprised to find France in second place with 1.2 million m³, and Sweden only in third place with slightly less annual exports. Of French exports, however, some 450 000 m³ consisted of fuelwood.

When we also take import figures into consideration, Finland remains in first place with the largest positive raw-wood balance. In second place, we find Yugoslavia with an annual positive balance of about 1 million m³ during the 1950's, but of this export 300 000 m³ was fuelwood. Sweden comes in third place with a positive balance of only 0.4 million m³. It can further be mentioned that Norway shows a negative balance, while France has a trivial surplus, due to her large fuelwood export.

Among the importing countries, W. Germany leads with a negative balance of 2.8 million m³. Thus, during the 1950's W. Germany passed the U.K. as an importer of raw wood, and now leads in log and pulpwood imports, while the U.K. has the largest import of pitprops, sleepers and the poles, piling and posts group.

No less than 3.4 million m³ raw wood have been sold annually by countries appearing both as exporters and importers. It seems as if this raw-wood trade is a consequence of transport conditions, making it more favourable to export to neighbouring countries. This trade is expected to remain, even if trade volume decreases.

In order to get a picture of what kinds of raw wood show the largest or smallest changes in volume, average calculations have been made in order to compare the annual deviations with the total average trade volume during the 1950's. The results can be studied in Tables 24 and 25 on pp. 43—44. Finally, the diversion of trade to different countries is illustrated in Tables 26—31 (pp. 46—54).

As regards Finnish exports, W. Germany has been the most important buyer with total average purchases of 750 000 m³ annually. The U.K. and France follow.

In Tables 32—34 (pp. 55—57) we have pictured the imports from sources outside Europe, and results are summed up in Tables 34 and 35 (p. 58). Here we note that the total Canadian export to Europe, during the 1950's was overtaken by that of the USSR. The largest group of imports coming from non-European sources is that of broadleaved logs; these mainly come from Africa. In total the European raw-wood balance shows an annual deficit of 3 million m³.

The analysis of the situation in the export countries leads to the conclusion that in W. Europe, from a theoretical point of view of raw-wood balance, only Finland can maintain a larger raw-wood export. However, there are different opinions on the suitable felling amounts. It seems probable that sylvicultural activities will permit of larger fellings than calculated. On page 75 is shown the Finnish wood balance as development seems indicated during the 1960's according to the material here studied.

It does not seem that the situation will develop as favourably in Sweden. If we consider the wood balance from a theoretical standpoint, evidently the export of raw wood should end when the latest industrial expansions at the beginning of the 1960's have been completed. Here, however, sylviculture might also allow greater fellings than expected.

From a timber balance point of view, neither Norway nor Austria has possibilities of maintaining an important export of raw wood. In the Soviet Union, on the other hand, the forest resources still allow of a practically unlimited export.

From a national point of view, an export of raw-wood is naturally condemnable, as instead the countries' own refining industries should be expanded. As long as this is not the case, and as long as the wood balance permits, the export can be well justified in view of sylviculture and labour, because the fellings should be kept as high as the sustained yield demand allows.

Industrial expansion in Finland is so large that a further expansion is not to be recommended before we have learned how this industrialization actually

affects the wood balance. Similarly we should consolidate the consumption situation of the import countries. The FAO prognosis is based upon a definite development; if this cannot be followed the dates of the calculated consumption demand are not necessarily valid.

For several hundred years, there has been anxiety about overfelling in the Finnish forests. Sooner or later it will come to the point that further fellings cannot be allowed from the point of view of sustained yield. This point will hardly be passed during the present decade.

The expected increase in the consumption of wood products has lately been studied in several investigations, and thus we have not considered necessary a deeper analysis of these questions. All prognoses tells us that the demand for pulpwood will grow very rapidly. In order to attempt to show how this growing demand will affect the pulpwood trade, the correlation between import and felling on one hand, and pulp production during the 1950's on the other, has been investigated in some leading import countries (Table 54 p. 107). It seems quite obvious that the expansion of the pulp industry is more and more based upon imported raw material.

Large forest cultivation programmes are followed in most countries, but the improved timber situation achieved is balanced by the growing population.

The wood industries of the import countries are greatly extended, and it is not likely that their development will cease despite that some of the continued expansion evidently being concentrated in the export countries. It is likely that the import countries will not try to develop a cellulose industry which will be dependent on coniferous timber. Rather, we can expect an expansion of the mechanical pulp and particle board industries. This is because the investment demand for these branches of industry is smaller and they can be kept going on poorer raw material.

Everything indicates that the consumption of paper and other cellulose products will increase to such an extent in Europe that her own forest resources will not be sufficient. Thus non-European sellers will have to come into the picture. The USA seem to be tied to their own home market. But the Soviet Union, and to some extent Canada as well, will appear as coniferous raw-wood suppliers.

With better communications and an abundance of shipping, the distances do not seem to have quite the same importance to the raw material supply as previously. Thus in the market analysis we could note that: »Kanadensiskt virke har sålunda både i England och på den europeiska kontinenten erövrat marknader på de nordiska ländernas bekostnad.» (*Canadian timber has thus both in England and on the European continent captured markets at the expense of the Nordic countries.*) (Wegelius 1959 p. 41, cf. also Streyffert 1959 p. 506).

On the other hand Ronge (1957 p. 239) finds that: »Det kanadensiska utbudet till Europa utgör en marginalkvantitet och dess storlek blir beroende på hur

mycket som återstår när U.S.A.:s behov är fyllt.» (*The Canadian offer to Europe comprises a marginal quantity, and its size depends upon how much remains when the demand of the U.S.A. is satisfied.*)

Thus only the Soviet Union can deliver additional coniferous raw wood. Probably the Soviet Union deliveries during this 10 year period will exceed the Canadian share. This will not be hampered by the wood balance, but it is impossible to say what the official Russian attitude will be. No doubt efforts will be made to deliver refined goods. Evidently Africa will dominate the non-European export of broadleaved raw wood. Flatscher writes (1955 p. 145): »Seine natürliche, wirtschaftliche Ergänzung findet Europa in Afrika.»

At least the EEC countries will concentrate their purchases in African colonial areas of the member countries. We cannot however count on unlimited offers of African timber during this decade. The best-situated sources have been heavily taxed, and the use of more remote areas demands new roads and other felling investments. The okoumé supplies seem to be particularly threatened (cf. IH 1960 No. 10 p. 12).

The cellulose industry built up in the tropical countries, as it stands at present, will hardly affect the European market during this 10 year period. Let us note that this expansion is often economically helped by more industrialized countries. Thus it is not impossible that some of those engaged in this industry will co-operate closely with European concerns, which can influence the European raw-wood supply. It is hard to believe that wood fibre could be outclassed as a raw material during the 1960's. It is true that the chemical industry for paper manufacture from other materials and through synthetic processes is rapidly developing, but so is wood chemistry.

For the time being 90 % of paper and cardboard manufacture is based upon coniferous fibre.

The new market groups were illustrated in Chapter 5. As we saw, the EEC countries do not try to form any mutual wood market, but only a co-ordination of forest management. The EFTA agreement seems to have great difficulties ahead as long as these countries form only a free trade area with no external custom tariff. Within the East bloc, a strong organisation has been formed through Komekon, which can be compared to EEC.

The trade policy naturally has an appreciable affect on the timber trade. In connection with the new Brussels nomenclature, most countries have renewed their custom rates. A comparative investigation of the raw-wood customs in the most important countries has been made on pages 183—194. Here we see that Italy and France have the highest raw-wood duties, while the Northern countries and Benelux as a rule allow a free import. Imports to the U.K. are generally subjected to duty, with the exception of imports from Commonwelth countries which, owing to preferential duties, are free. Generally speaking there are at present many customs variations on account of numerous trade agreements and the customs reduction within EEC and EFTA during the transition period.

The EEC countries furthermore have had to decide on the mutual external duties towards outside countries. A detailed study of these duties has been made on pages 197—200. We noted that the external duty has generally been set lower than the mathematical average of the national customs rates would suggest. The duty varies between custom-free and 5—8 %, depending on the kind of raw wood. The highest duty 10 %, is imposed on impregnated sleepers. It can be of importance for the future that all American species may be imported free from duty.

Only Switzerland had an active customs policy in the raw-wood trade during the 1950's. As a rule, the other countries have preferred to influence trade by means of quantitative export and import restrictions. Such restrictions were still rather general at the beginning of the 1950's, but have later been abolished in many countries. The import restrictions generally seem to have been abolished earlier than the corresponding export limitations.

The advantages and disadvantages of a regulation of the wood trade have been thoroughly discussed in Finland. The result is that the export regulations during the main part of the 1950's have not affected the trade to any great extent.

However, these regulations now seem to have outlived themselves, as the argumentation of the postwar period no longer seems valid. The statement that the price development can be influenced by these regulations seems particularly strange, as the total raw-wood trade is about 5 % of the total fellings in Europe.

Because of the different possibilities of development, it is rather difficult to estimate how the new trade groups will affect the European raw-wood trade. As this is being written, Finland still remains outside these groups, and EEC and EFTA have not yet succeeded in achieving co-operation. Entirely new situations arise along with further expansions of this co-operation. As Mantel (1959 p. 8) points out, it is however evident that the timber trade is becoming more and more international.

In order to picture the timber situations of EEC and EFTA, Tables 60—65 (pp. 160—163) have been compiled. From these, the obvious wood deficit of EEC is seen (6.1 million m^3), and Finland's important position balancing this deficit to some extent. As long as Finland is not a member of EFTA, the timber deficit of this group is also rather important (2.7 million m^3).

If we examine the total of forest industry, the EEC shows a considerable deficit, 27.5 million m^3 annually, while EFTA, because of Sweden, has a positive balance of 2.6 million m^3. Evidently a trade war between these groups would lead to difficult subversion problems in the entire European timber market.

Finland's situation in comparison with the trade groups has been illustrated

in Tables 66—68 (pp. 167—168). As we see, the Finnish wood industry has an almost equal interest in both EEC and EFTA. If we regard only the raw-wood trade, the EEC countries are more important. The East bloc trade in raw-wood is comparatively unimportant.

The direct influence of the free trade groups seems to be quite trivial. In the EEC group, we can expect an increase in the border trade between countries along with the abolition of duties and remaining restrictions. Such areas are especially the borders of France- W. Germany, France-Belgium and Benelux-W. Germany.

In the EFTA group, it is only Austria and Switzerland that are directly influenced by the agreement, as the other countries have already allowed a more or less free raw-wood trade.

On the whole, it seems as if the European raw-wood trade should continue on a rather large scale during the 1960's, partly because the border trade can be expected to increase, with a freer trade, and partly because the European timber deficit needs filling from sources outside Europe. In addition, the pulp industries in the importing countries will compete more and more keenly with the exporting countries for pulpwood supplies.

Bibliography

Aarnio, Paavo. 1958. Yhteismarkkinat ja niiden merkitys Suomen kansantaloudelle. KA p. 161.

A common market in Western Europe. 1957. Czechoslovak Economic Bulletin No. 9. Prag.

A europan free trade area. 1957. United Kingdom memorandum. London.

Achterath, Helmut. 1919. Deutsche Rohholzwirtschaft während des Krieges und in der Übergangszeit. Frankfurt a.M.

Algvere, K. V. 1955. Det skogindustriella läget inom Sovjetunionen. En utredning på basis av den ryska skogliga litteraturen och fackpressen. Stockholm.

Aro, Eino. J. 1955. Features of the price development of woodworking products during the last few years. Reprint from Economic Review No. 2.

Awater, Josefine. 1936. Der europäische Holzmarkt nach dem Weltkriege. Münster.

Beyer, Paul. 1957. Transport et marché commun. RBEE No. 178 p. 1104.

Borenius, Lauri. 1960. Metsäteollisuutemme laajentumiseen liittyvät näkymät. Metsälehti No. 7 p. 2.

Bowles, W. Donald. 1959. Zur lage der Arbeitsproduktivität in der sowjetischen Holzgewinnung. Forstarchiv p. 215.

Braun, Rudolf. 1959. Der Weg zur richtigen Holzvorratsbilanz. Holz-Kurier No. 35 p. 5.

—»— 1960. Leistungsgrenzen der österreichischen Forstwirtschaft. Holz-Kurier No. 17 p. 1.

Brünig, E. F. 1958. Betrachtungen zur Entwicklung des britischen forstwesens in Geschichte und Gegenwart. Allgemeine Forst und Jagdzeitung p. 252.

Buchholz, Erwin. 1954. Organisation und Politik der sowjetischen Forst- und Holzwirtschaft. Zeitschrift für Weltforstwirtschaft p. 1.

—»— 1957. Aus der Geschichte der russischen Forst-und Holzwirtschaft. Hamburg.

Burger, Otto. 1960. Österreichs Schnittholzexport-europäisch gesehen. HZ p.1.

Butkowski von, W. 1951. De skogliga förhållandena i Förbundsrepubliken Wästtyskland. SST p. 384.

Camphion, H. G. 1948. Afforestation as a world problem. Empire Forestry Review p. 260.

—»— 1950. The future of our new forests. The Advance of Science No. 24 p. 319.

Coulon de, Maurice. 1957. L'économie forestière suisse en période de guerre. Neuchatel.

Crespel, A. 1933. Le marché du bois et son organisation internationale. Paris.

Danielsen, Nils. 1959. Trends and problems in Swedisch forest industries 1958. STT annuel issue p. 79.

Das Ergebnis der Waldstandsaufnahme. 1959. IH No. 7 p. 18.

Das Holz in der Wirtschaftsintegration 1957. Holz-Kurier No. 1 p. 1.

Der neue Zolltarif ab 1. Januar 1958. 1957. HZ p. 1515.

Diamant, Gerhard. 1936. Deutschlands Papierholzeinfuhr im Rahmen seiner Papierholzbeschaffung. Leipzig.

Dieterich, Willi. 1934. Westeuropa als Absatzmarkt für die deutsche Papier- und Pappenindustrie. Würzburg.

DUSCHEK, STEFAN. 1956. Oesterreichs Forst- und Holzwirtschaft nach der Waldstandsaufnahme. Holz-Kurier No. 38 p. 1.
DWORAK, F. G. 1959. L' Autriche et le marché européen. RBEE No. 187 p. 572.
ECE. 1955. Small-sized roundwood-market review 1955 and prospects in 1956. In MS. Geneva.
—»— 1958 a. Developments in production and trade of sawn softwood in the post-war period. In MS. Geneva.
—»— 1958 b. Small sized roundwood: market review and prospects. In MS. Geneva.
—»— 1958 c. The hardwood market in Europe. [Geneva].
EKLUND, RISTO. 1957. Neuvostoliiton metsätalous ja metsäteknologia. In MS. Helsinki.
ELSRUD, WILHELM-AARATSMARK, IVAR. 1957. Norsk skogbruk og skogpolitikk. Oslo.
ERIKSSON, RAGNAR. 1959. Om virkesbalansers nytta och tillförlitlighet. Skogen p. 477.
ERVASTI, SEPPO. 1960. Metsäntuotteet Ison-Britannian rakennusaineiden mainonnassa. SF 104. Helsinki.
European Free Trade Association. 1959. Konvention angående upprättandet av Europeiska frihandelssammanslutningen. Kommersiella Meddelanden No. 11.
Europäische fællesmarkedsplaner og deres betydning for dansk træindustri. 1957. Traeindustrien p. 81.
FAO, 1953 a. European timber statistics 1913—1950. Geneva.
—»— 1953 b. National forest policies in Europe. FAO forestry and forest products studies No. 8. Rome.
—»— 1955. Pulp and paper prospects in latin America. New York.
—»— 1957. Trends in utilization of wood and its products in housing. Geneva.
—»— 1958 a. World forest products statistics. A ten-year summary 1946—1955. Rome.
—»— 1958 b. The growth of forest industries and their impact on the world's forests. Reprinted from the state of food and agriculture 1958. Roma.
—»— 1958 c. Fibrebord and particle board. Roma.
—»— 1959. Final report of the world consultation on pulp and paper demand, supply and trade. In MS. Rome.
—»— 1960. World forest inventory. Rome.
FAYAT, HENRI. 1958. L'unification économique de l'Europe. RBEE No. 179 p. 167.
FLATSCHER, HERMANN. 1955. Der europäische Holzmarkt. Zentralblatt für das gesamte Forstwesen p. 129.
Forest products. 1959. Published by Barclays Bank D.C.O. London.
Forestry Commission. 1943. Post-war forest policy. London.
Forestry Commission. 1948. The dedication of wood-lands. Principles and procedure. London.
FRIEDERICHS, HANS. 1931. Ostpreussens Holzhandel und Holzindustrie. Die gegenwärtige Lage im Vergleich zur Vorkriegszeit. Berlin.
FRIEDRICH. 1960. Holzwerbung durch europäische Interessengemeinschaft. IH No. 1 p. 12.
GLUCK, KARL. 1957. Freihandeleszone und Gemeinsamer Markt. IH No. 1 p. 27.
HABERLER VON, GOTTFRIED. 1950. The theory of international trade. London.
HALLSTEIN, WALTER. 1958. Les entreprises dans le Marché commun. RBEE No. 183 p. 906.
HAMILTON, H. 1959. Nordens barrskogar och tropikernas lövskogar på framtidens cellulosamarknad. SST p. 563.
HANDEL—MAZZETTI, Peter. 1954. Der Wiederaufbau der holzverarbeitenden Industrien Österreichs. Zeitschrift für Weltforstwirtschaft p. 225.
—»— 1957. Die Entwicklung der österreichischen Papierindustrie seit 1945. AF p. 309.
—»— 1958. Konjunkturskizzen zum gemeinsamen Europäischen Markt. Holz-Kurier No. 15 p. 6.
—»— 1959 a. Unsere Holzverarbeitende Industrie und die Freihandelszone. IH No. 6 p. 5.
—»— 1959 b. Welt-holzmarkt und Komekon. IH No. 9 p. 3.

HELANDER, BENJ. A. 1910. Om exporttullar på klenvirke. Helsingfors.
HENSHAW, H. 1949. The use of timber in mining. London.
HERBIGNAT, A. 1960. Le rôle de la forêt et le domaine forestier belge. Bulletin de la Société Royale Forestière de Belgique p. 173.
HILEY, W. E. 1956. Economic of plantations. London.
HOLOPAINEN, VILJO. 1952. Britannian kaivospuun tuonnin näköaloista. MTJ 40.
—»— 1957. Raakapuun ja puutyösteiden markkinat. Suuri Metsäkirja II. Helsinki.
HORTLING, GUSTAF. 1958. Europeiska frihandelssträvanden och Gatt. EST p. 85.
ILVESSALO, YRJÖ. 1931. Pohjoismaiden metsävarat toisiinsa verrattuina. MTJ 14.
—»— 1956. Suomen metsät vuosista 1921—24 vuosiin 1951—53. Kolmeen valtakunnan metsien inventointiin perustuva tutkimus. MTJ 47.
—»— 1960. Metsiemme hakkuusuunnitteen tarkastelua koko Suomen yhdistelmänä. Metsälehti No. 7 p. 4.
JUKARAINEN, NIILO. 1959. Puunjalostusteollisuuden kehittämisestä. TK p. 11.
KARA, KIMMO. 1960. Euroopan vapaakauppaliitto. TK p. 23.
KARJALAINEN, AHTI. 1957. Plan for the expansion and improvement of economic co-operation in the Nordic Countries. Bank of Finland Monthly Bulletin No. 12 p. 18.
Kleine Freihandelszone und Österreichs Holzwirtschaft. 1959. IH No. 17/18 p. 18.
KLEPPEN, M. Virkesomsetning i en del viktige skogland. 1958. Norsk Skogindustri p. 55.
KLOSE, F. J.-WILKENS, A.-BEYER, F. 1955. Die Forstwirtschaft in Frankreich. Frankfurt/Main.
KLOSE. 1959. Die deutsche Forst- und Holzwirtschaft in der Europäischen Wirtschaftsgemeinschaft. AF p. 330.
KMONITZEK, E. 1958. Forstwirtschaft und Europäische Wirtschafts-Gemeinschaft. AF p. 165.
—»— 1960 a. Entwicklungstendenzen des Rohholzmarktes. HZ p. 373.
—»— 1960 b. Die Holzschwelle im Bericht über die Deutsche Bundesbahn. HZ p. 659.
Komiteanmietintö 1951: 12. Teollistamiskomitean mietintö. Helsinki.
Komiteanmietintö no 4. 1959. Teollisuusneuvottelukunnan mietintö teollistumisen edellytyksistä ja toimenpiteistä sen edistämiseksi. Helsinki.
Kommittén för utredande af frågan huruvida landets skogar öfverafverkas samt, om så befinnes vara fallet, hvilka åtgärder borde vidtagas för att hindra denna öfverafverkning. 1916. Helsingfors.
KOROLEFF, A. 1959. Logging mechanization in the USSR. Montreal.
KORPELAINEN, LAURI. 1959. Metsätalous Suomen kansantaloudessa. TK p. 94.
KROG, PER. 1960. Frihandel-en fordel for og en utfordring til skogbruket. Norsk Skogbruk p. 3.
KUUSELA, KULLERVO. 1960. Teollisuuden raakapuun saannin edellytykset. Metsälehti No. 9 p. 9.
KÖSTLER, JOSEF. 1934. Der zwischenstaatliche Holzverkehr in Europa 1925—1932. Hannover.
LAAKSONEN, YRJÖ W. 1958. Raakapuun hankinnat hankintakautena 1957/58. SP p. 159.
Landsskogtakseringen. 1933. Taksering av Norges skoger. Oslo.
LARNA, KAARLO. 1957. Euroopan vapaakauppa-alue. TK p. 195.
LEMMEL, H. 1956. Forstliche Holzmarktpolitik. Frankfurt am Main.
LIHTONEN, V. 1947. Valtakunnan metsätalouden järjestely metsiemme poistuman ja tuottohakkausmäärän valossa. AFF 53.
LINDFORS, JARL. 1958. Rationaliseringen i nordens skogsbruk. Skogsbruket p. 233.
LUTHMAN, GÖSTA-RYDIN, Bo. 1959. Utnyttjande av virkesöverskott-ekonomisk storlek och lokalisering av massafabriker. Affärsekonomi p. 839.
LÖBE, KARL. 1956. Deutsche Holzeinfuhr aus Geschichte und Gegenwart. Stuttgart.
MAC GREGOR, J. J. 1960. European timber requirements for mining. Wood p. 339.

MAGAUD, M. CHARLES. 1958. Les industries du bois face au marché commun. Revue du bois et de ses applications. No. 7/8 p. 57.

MAIROVITZ, L. 1959. Die Industrielle Planung in den Oststaaten. IH No. 6 p. 10.

MANN, WALTER. 1960. Die Versorgung der Holzindustrie in der Bundesrepublik mit einheimischen Forsterzeugnissen. In MS. Bonn.

MANTEL, K. 1939. Grundzüge der deutschen Forst und Holzwirtschaftspolitik mit besonderer Berüchsichtigung forst- und verwaltungsrechtlicher Fragen. Neudamm and Berlin.

—»— 1942. Holzmarktlehre. [Neudamm].

—»— 1954. Probleme der deutschen Verkehrspolitik in ihrer Auswirkung auf die Forst- und Holzwirtschaft. HZ No. 120.

—»— 1957. Probleme der europäischen Wirtschaftsgemeinschaft und der Freihandelszone für die deutsche Forst- und Holzwirtschaft. HZ p. 1901.

—»— 1958 a. Weitere Probleme der EWG und der Freihandelszone für die deutsche Forst- und Holzwirtschaft. Reprint from HZ No. 57.

—»— 1958 b. Die forst- und holzwirtschaftspolitischen Beziehungen zwischen Österreich und den westdeutschen Ländern. AF p. 649.

—»— 1958 c. Eingliederung der Forstwirtschaft in den Gemeinsamen Markt. Der Forst- und Holzwirt p. 481.

—»— 1958 d. Die europäische Wirtschaftspolitik und die deutsche Forstwirtschaft in Vergangenheit und Zukunft. HZ p. 1401.

—»— 1959. Die Forstwirtschaft im Europäischen Markt untersucht am Beispiel von Reinland-Pfalz. Reprint from der Waldbesitzer No. 1.

—»— 1960. Die Forst- und Holzwirtschaft von Österreich und Deutschland in der EWG und in der EFTA. IH No. 13 p. 3.

MATHIESEN, JØRGEN. 1946. Mål og midler i norsk skogbruk. Bergen.

—»— 1949. Problemer i norsk skogbruk. Reprint from Tidsskrift for Skogbruk No. 1. Oslo.

—»— 1958. Mål og midler i norsk skogbruk. Tidsskrift for Skogbruk p. 159.

METZLER, LLOYD A. 1949. The theory of international trade. London.

MILCHERSICH, PAOLO. 1960. Wie sieht Italien die EWG nach dem ersten Probejahr. IH No. 3 p. 6.

MÖRATH, E. 1958. Holzschwellen bleiben auch in Zukunft führend. HZ p. 1452.

NITSCH, HANS. 1957. Struktur und Entwicklung des westdeutschen Holzmarktes unter besonderer Berücksichtigung der Holzpreise. Stuttgart.

Nordiska Skogsunionen. 1958. Statistiska uppgifter rörande skogstillgångarna i de nordiska länderna. Norrtälje.

Nytt byggelement gör sågverksavfallet värdefullt. 1960. Trävaruindustrin No. 3 p. 44.

Några data om slipersförbrukningen. 1960. Trävaruindustrien p. 131.

OEDEKOVEN. 1959. Le marché commun au point de vue forestier. Position de la forêt allemande. Bulletin de la Société Royale Forestière de Belgique p. 97.

OEEC. 1953. Tropical timber. Production and consumption prospects. Paris.

—»— 1954. Timber industry in Europe. Paris.

—»— 1955. Die Produktivität in der Forstwirtschaft und Holzindustrie. Paris.

—»— 1956. Timber industry in Europe. Statistics for 1955-trends for 1956. Paris.

—»— 1957 a. Report on the possibility of creating a free trade area in Europe. London.

—»— 1957 b. The pulp and paper industry in Europe. Its trend from 1950 to 1955 its future prospects. Paris.

—»— 1958. 10 ans qui ont changé l'Europe-OEEC 1948—1958. Paris

OLIN, C-E. 1957. Västeuropeisk gemensam marknad. EST p. 85.

OREŠČANIN, DUŠAN. 1960. Die Entwicklung der jugoslawischen Holzausfuhr. HZ p. 61.

OSARA, N. A.-PÖNTYNEN, V.-ERKKILÄ, E. E. 1948. Suomen puun käyttö ja metsätase. MTJ 36. Helsinki.

OSARA, N. A. 1954. Metsäteollisuutemme kehittämisen välttämättömyys. TK p. 95.

PALOHEIMO, OLLI. 1958. Metsäteollisuutemme kehitysmahdollisuudet. SP p. 143.

PATERSEN, STEN STURE. 1956. The forest area of the world and its potential productivity. Göteborg.

PAUES, WILHELM. 1957. Europamarknaden och företaget. Stockholm.

—»— 1957. Rom-avtalet om den gemensamma europeiska marknaden. Stockholm.

PERROT, C. 1957. Prix des bois et valeurs mobilieres. Revue Forestiére Française p. 761.

PIHA, ANTERO. 1957. Metsätulot ja maatilan pääoman muodostus. AFF 65.

POCKBERGER, JOSEF. 1953. Waldbau in der Schweitz. Wien.

PUTKISTO, KALLE. 1959. Puun korjuutöiden koneellistuminen ja metsätalouden työvoiman tarve. MA p. 236.

PÖNTYNEN, V. 1932. Jalostamattoman puutavaran vienti Suomesta vuosina 1911—1931. Helsinki.

—»— 1939. Suomen puunjalostusteollisuus raaka-aineen käyttäjänä vuosina 1925—1935. AFF 45.

—»— 1954. Hajahavaintoja Neuvostoliiton metsätaloudesta. Reprint from Metsämies No. 11.

—»— 1958. Puunkäyttötutkimusten tuloksia. Reprint from MA No. 7. Helsinki.

—»— 1959. Suomen puun käytöstä ja metsätaseista. SP p. 91.

—»— 1960. Suomen puun käytöstä sodan jälkeen. MA p. 221.

RANINEN, HUUGO. 1951. Valmiin puutavaran kauppa. Helsinki.

RASCH, OLE ANKER. 1959. Skogsindustrien må utbygges i takt med skogbrukets ekspansjon. Norsk Skogbruk p. 571.

REED, J. L. 1956. Forests of France. London.

REST VAN DER, PIERRE. 1959. Intégration européenne et économie de marché. RBEE. No. 185 p. 271.

RINTAKOSKI, URPO. 1957. Suomen asema maailman sahatavaramarkkinoilla. Unitas No. 3 p. 105.

RONGE, K. 1957. Sveriges export av trävaror. SST p. 229.

ROSAL, MAURICIO. 1959. Le marché commun centre-américain. RBEE No. 186 p. 357.

ROUSSIGNHOL, CH. 1958. La marché commun est une chance pour la forêt française si l'etat adopte a'temps une politique d'investiments. La Bois No. 48—49 p. 3.

RUPF, HUBERT. 1959. Die europäische Forstwirtschaft im Spiegel wirtschaftspolitischer Integration. Holz-Kurier No. 10 p. 5.

RUSSANOW, IWAN. 1959. Ryssland som skogsland. SST p. 571.

SAARI, EINO. 1934. Puun käyttö Suomessa. MTJ 14.

—»— 1948. Suomen metsäteollisuuden raakapuun saanti metsätaseen kannalta tarkasteltuna. KA p. 201.

SANNWALD, ROLF-STOHLER, JACQUES. 1958. Wirtschaftliche Integration. Theoretische Voraussetzungen und Folgen eines europäischen Zusammenschlusses. Tübingen.

SAVOLA, U. E. 1959. Mekaanisen puunjalostusteollisuutemme tulevaisuudennäkymiä. SP p. 237.

SCHEIFELE. 1960. Die fortswirtschaftlichen Verhältnisse in Frankreich. HZ p. 825.

SCHROEDER, ROLAND. 1953. Die Holzwirtschaft der Welt. Berlin.

SEIP, HANS KRISTIAN. 1958. Prognose over fremtidige hogstkvantum i noen av våre viktigste skogfylker. Informasjon B No. 6.

SJUNNESSON, LARS. 1960. Den svenska massaindustrien och dess framtidsutsikter. SPT p. 259.

SJÖSTEDT, STURE. 1959. Ett mellansvenskt skogsbruk under trettio år (1928—1958). SST p. 487.
—»— 1960. Lövskogens betydelse för den totala virkesproduktionen i Sverige. SPT p. 286.
SKINNEMOEN, KNUT. 1957. An outline of Norwegian forestry. Oslo.
Skogkommisjonen av 1951. 1959. Forslag til retningslinjer for skogpolitikken. Innstilling IV. Lillehammer.
Skogsindustriens råvaruförsörjning i södra Sverige. 1959. Utredning verkställd genom Sydöstra Sveriges Skogsägares Förbund. Stockholm.
Skogsindustriens virkesutredning 1958. 1959. Skogsindustriernas sammarbetsutskott. Stockholm.
SOU. 1932: 26. Uppskattning av Sveriges skogstillgångar verkställd åren 1923—1929. Redogörelse avgiven av Riksskogstaxeringsnämnden. Stockholm.
—»— 1952: 15. Barrskogstillgångarna och skogsindustriens råvaruförsörjning. Undersökning utförd av Södra Sveriges skogsindustriutredning. Stockholm.
—»— 1953: 19. Sågverksindustrien i södra Sverige. Betänkande avgivet av Södra Sveriges Skogsindustriutredning. Stockholm.
—»— 1954: 29. Klenvirke. Användningen av barrklenvirke, lövvirke och sågverksavfall. Betänkande avgivet av Södra Sveriges Skogsindustriutredning. Stockholm.
—»— 1956: 33. Skogsindustrins utbyggnad. Betänkande avgivet av Södra Sveriges Skogsindustriutredning. Stockholm.
—»— 1957: 37. Nordiskt ekonomiskt samarbete. Rapport från nordiska ekonomiska samarbetsutskottet. Allmän del. Stockholm.
—»— 1958: 31. Nordiskt ekonomiskt samarbete. Tilläggsrapport från nordiska ekonomiska samarbetsutskottet. Stockholm.
—»— 1958: 45. Skogstillståndet hos olika ägargrupper. Utredning grundad på riksskogstaxeringens material. Stockholm.
SPEER, JULIUS. 1955. Wiederaufforstung von Kahlflächen in England. Frankfurt/Main.
—»— 1957. Elemente des westdeutschen Rohholzmarkten. Deutscher Forstwirtschaftsrat. Rebach bei Bonn.
—»— 1958. Der Holzmarkt im Zeitalten der Grossindustrie. Stuttgart.
—»— 1959. Ergebnisse und Betrachtungen am Ende des Forstwirtschaftsjahres 1958. AF No. 1. p. 1.
—»— 1960 a. Ergebnisse und Betrachtungen am Ende des Forstwirtschaftsjahres 1959. AF No. 1 p. 1.
—»— 1960 b. Die Zukunftsaussichten des Holzes in Westeuropa. IH No. 1 p. 5.
SPRINCYN, M. N. 1958. Osnovnye napravlenija rzvitija lesnoj promyslennosti SSSR. Lesnaja Promyslennost.
STEENBERG, BÖRJE. 1960. Översikt över lövvedens utnyttjande i Sverige och utlandet. Skogen p. 204.
STJERNSCHANTZ, GÖRAN. 1958 a. Vår skogsindustris framtidsutsikter. Skogsbruket p. 135.
—»— 1958 b. Suomi ja Länsi-Euroopan yhteismarkkinat. Unitas p. 80.
STOFFELS, A. 1959. Die niderländische Forst und Holzwirtschaft in der Europäischen Wirtschaftsgemeinschaft. AF p. 545.
STREYFFERT, THORSTEN. 1953. Forst- und Holzwirtschaft in Schweden. Bulletin of the Royal School of Forestry. No. 12. Stockholm.
—»— 1957. Världens framtida virkesförsörjning. Stockholm.
—»— 1959. Skogsbruket och den tekniska utvecklingen. SST p. 499.
STÜRGKH, B. 1960. Die europäische Integration in Bezug auf die Forst- und Holzwirtschaft Österreichs. IH No. 2 p. 3.
Svenska Cellulosa Aktiebolaget. 1960. Årsredovisning 1/9 1958—31/8 1959. Stockholm.

Sveriges officiella statistik 1953. Sågverksdriften i Sverige 1953. Stockholm.
SWEDBERG, HANS. 1957. Integrationsplanerna i Västeuropa. Stockholm.
—»— 1958. Frihandelsområdet i brittisk export belysning. Svensk Export No. 1 p. 7.
SÖDERHJELM, J. O. 1957. Det europeiska frihandelsområdet och Finland. EST p. 75.
Taksering av Norges skoger. 1954. Revisjonstaksering 1953 av Eherum og Våler. Utfört av landsskogstakseringen. Oslo.
Talousneuvosto. 1958. Mietintö pyöreän puutavaran viennin säännöstelystä. In MS. Helsinki.
Talousohjelmakomitean osamietintö II. 1960. Tuotantopoliittinen ohjelma. Metsätalous. In MS. Helsinki.
Teollisuuden paperipuun vienti. 1959. SP p. 7.
THUNELL, BERTIL. 1953. Struktur und Produktionsentwicklung der deutschen Forstindustrien. Svenska Träforskningsinstitutet. Meddelande 40 B. Stockholm.
TRENDELENBURG, R.-MAYER-WEGELIN, H. 1955. Das Holz als Rohstoff. München.
Tømmer og skogindustriprodukter i Norden. 1957. Norsk Skogindustri. p. 407.
Vade-mecum du propriétaire forestier. 1959. Bulletin de la Société Royale Forestière de Belgique p. 465.
WAGENFÜHR, HORST. 1958. Marktforschung und Wirkung in der Holzwirtschaft. Bad Wärischen.
VAISSIERE DE, J. 1959. Les groupements forestiers. Bulletin de la Société Royale Forestière de Belgique p. 253.
VALTASAARI, MATTI. 1952. Metsäteollisuuden jalostusaste kansantalouden kannalta. KA p. 10.
WEDDING, K. U. 1957. Probleme des Faserholzmarktes. HZ p. 313.
WEGELIUS, TH. 1958. Aktuella problem inom Finlands skogsindustri. EST p. 103.
—»— 1959. Ersättningsmedel för barrträdsvirke som utgångsmaterial vid pappersframställningen. Norsk Skogbruk p. 41.
VELTER, GEORGES. 1960. Situation sociale et économique de la Belgique dans l'Europe. RBEE No. 189 p. 111.
VESTERINEN, EMIL. 1958. Metsänviljelystemme laajuus. SP p. 177.
VIGERUST, AASMUND. 1957. Våre skogers tilstand og produksjonsevne. Oslo.
VILLIKKA, PENTTI. 1959. Raakapuun vienti kolmannen yleisen puunkäyttötutkimuksen mukaan. MA p. 244.
WINKELMANN, HANS, G. 1954. Holzindustrie und Waldwirtschaft in der Schweitz. Schweitzerische Zeitschrift für Forstwesen p. 563.
—»— 1960. L'existence de notre économie forestière ne doit pas être mise en danger. La Forêt p. 183.
VUORI, P. 1959. Raakapuun hankinnat hankintakautena 1958/59. SP p. 245.
ZURCHER, ARNOLD J. 1958. The struggle to unite Europe 1940—1958. New York.

Periodicals and trade journals

Acta Forestalia Fennica. Helsinki.
Advance of Science, the. London.
Affärsekonomi. Stockholm.
Allgemeine Forst und Jagdzeitung. Frankfurt am Main.
Allgemeine Forstzeitschrift. München.
Archiv für Forstwesen. Berlin.
Bank of Finland (Monthly Bulletin). Helsinki.
Bulletin de la Société Royale Forestière de Belgique. Bruxelles.
Bulletin International des Douanes. Brussels.
Economic Review. Helsinki.

Ekonomisk Revy. Stockholm.
Ekonomiska Samfundets Tidskrift. Helsinki.
Empire Forestry Review, the. London.
Forêt, la. Neuchâtel.
Forstarchiv. Hannover.
Forst- und Holzwirt, der. Hannover.
Forstliche Wochenschrift Silva. Tübingen.
Forstwissenschaftliches Centralblatt. Hamburg.
Holz-Kurier. Wien.
Holz-Zentralblatt. Stuttgart.
Internationaler Holzmarkt. Wien.
Journal of Forestry. Washington D.C.
Kansantaloudellinen Aikakauskirja. Helsinki.
Kommersiella Meddelanden. Stockholm.
Lesnaja promyšlennost. Moscow.
Metsälehti. Helsinki.
Metsämies. Vammala.
Metsätaloudellinen Aikakauslehti. Helsinki.
Metsätieteellisen Tutkimuslaitoksen Julkaisuja Helsinki.
Monthly Bulletin of Statistics. New York.
Nature. London.
Nederlands Bosbouw Tijdschrift. Arnhem.
Norrlands Skogsvårdsförbunds Tidskrift. Stockholm.
Norsk Skogbruk. Oslo.
Norsk Skogindustri. Oslo.
Pulp & Paper International. The Netherlands.
Revue de la Société Belge d'Études & d'Éxpansion. Liège.
Revue du Bois et de ses Applications. Paris.
Revue Forestière Française. Nancy.
Revue Internationale du Bois. Paris.
Schweitzerische Zeitschrift für Forstwesen. Zürich.
Silva Fennica. Helsinki.
Skogen. Stockholm.
Skogsbruket. Helsinki.
Suomen Puutalous. Helsinki.
Svensk Export. Stockholm.
Svensk Pappers Tidning. Stockholm.
Svenska Skogsvårdsföreningens Tidskrift. Stockholm and Norrtälje.
Svensk Pappersmassetidning. Stockholm.
Svensk Trävaru-tidning. Stockholm.
Taloudellinen Katsaus. Helsinki.
Tidsskrift for Skogbruk. Oslo.
Timber Bulletin for Europe. Before 1955 Timber Statistics for Europe. Geneve.
Timber Trades Journal, the. London.
Træindustrien. Allerød.
Trävaruindustrien. Stockholm.
Unitas. Helsinki.
Wood. London.
Yearbook of Forest Products Statistics. Rome.
Zeitschrift für Weltforstwirtschaft. Berlin—Grunewald.
Zentralblatt für das gesamte Forstwesen. Wien.

Abreviations

AF = Allgemeine Forstzeitschrift.
AFF = Acta Forestalia Fennica.
ECE = Economic Commission for Europe.
EST = Ekonomiska Samfundets Tidskrift.
HZ = Holz-Zentralblatt.
IH = Internationaler Holzmarkt.
KA = Kansantaloudellinen Aikakauskirja.
MA = Metsätaloudellinen Aikakauslehti.
MTJ = Metsätieteellisen Tutkimuslaitoksen Julkaisuja.
RBEE = Revue de la Société Belge d'Études et d'Expansion.
SF = Silva Fennica.
SP = Suomen Puutalous.
SPT = Svensk Pappers Tidning.
SST = Svenska Skogsvårdsföreningens Tidskrift.
STT = Svensk Trävaru-tidning.
TK = Taloudellinen Katsaus.

Eventual slight differences in some of the tables in the totales given compared to the component figures are due to the calculations of the components being brought back to one decimal.

All the ton values given are metric tons and the weight of wood pulp is expressed as calculated dry weight.

SELOSTUS:

RAAKAPUUN KAUPPA EUROOPASSA 1950-LUVULLA SEKÄ EEC:N JA EFTA:N VAIKUTUS SIIHEN

1. Johdanto

Toisen maailmansodan jälkeen raakapuun kauppa Euroopassa on kasvanut nopeassa tahdissa. Tämä on sikäli omituinen ilmiö, että luulisi vientimaiden vähitellen itse mieluummin työstävän raaka-ainevarojaan. Omituista on myös, että esimerkiksi paperipuuta myydään yhdestä vientimaasta toiseen vientimaahan. Sitäpaitsi sama maa voi esiintyä huomattavanakin raakapuun sekä vienti- että tuontimaana. Talousneuvosto toteaa vuonna 1958, että raakapuun vientiä on periaatteessa pidettävä epätarkoituksenmukaisena ja pitkällä tähtäimellä on pyrittävä siihen, että jalostaminen tapahtuu kokonaisuudessaan kotimaassa. Avoimeksi kysymykseksi jää tällöin, pieneneekö raakapuun kauppa lähitulevaisuudessa itsestään tai häviääkö ehkä kokonaan, vai onko muita näkökohtia, jotka vaikuttavat toisenlaiseen tulokseen.

Asian valaisemiseksi on ilmeisesti tutkittava, miten tärkeimmissä vientimaissa puutaloudellinen tase on kehittymässä, toisin sanoen, riittääkö puuta vietäväksi myös sen jälkeen, kun tiedossa olevat teollisuuden laajennukset on toteutettu. Toisena tärkeänä seikkana on pidettävä kauppapoliittisia näkökohtia. Euroopassa tapahtuu parhaillaan siksi mullistavia kauppapoliittisia uudelleen järjestelyjä, että nämä hyvinkin voivat vaikuttaa myös raakapuun kauppaan.

Metsätuotteiden kysynnän kehittymistä on viime aikoina tutkittu siksi laajalti, ettei asian tähän puoleen tarvitse syventyä.

Raakapuukaupan analysointi käsittää 1950-luvun. Asian valaiseminen on varsinkin Suomelle mielenkiintoinen, koska Suomen raakapuun vienti on Euroopan maista ylivoimaisesti suurin (1950-luvulla keskimäärin 4.2 milj. m³ vuodessa).

2. Raakapuun kauppa 1950-luvulla tilastojen valossa

21. Raakapuun ja raakapuunkaupan määritelmät.

Hakkuiden yhteydessä metsästä saadun ensiasteisen puutavaran yhteisnimenä käytetään sanaa raakapuu, mikä tuntuu johdonmukaisemmalta kuin termit pyöreä tai jalostamaton puutavara. Raakapuu jaetaan FAO:n mukaan seuraaviin ryhmiin:

saha-, vaneri- ja ratapölkkytukit
paperipuu
kaivospuu
ratapölkyt
pylväät
junttapaalut
tolpat
polttopuu.

Tilastollisen aineiston yhdistäminen kansainvälisissä puitteissa ei ole kiitollinen tehtävä. FAO:n käyttämät muuntoluvut ilmenevät taulukoista 1 ja 2 ss. 11—12. Raakapuun kauppaa tarkastellaan pääasiassa kansainvälisissä puitteissa.

22 Markkinakatsaus.

Markkinakatsauksessa annetaan laajempi tausta miten puutaloudelliset olosuhteet kehittyvät 1950-luvulla Euroopassa. Uuden vuosikymmenen alkaessa oli pahin puutavarapula sodan jälkeen voitettu ja jälleenrakentaminen pääsi vauhtiin. Olosuhteet normalisoituivat, mutta Korean sota sai aikaan, että raaka-aineiden kysyntä nousi valtavasti, mikä johti metsätuotteiden hintojen jyrkkään nousuun. Vuonna 1951 saavutti raakapuun kauppa ensimmäisen kerran sodan jälkeen suurin piirtein sotaa edeltäneen laajuutensa. Jo seuraavana vuonna vaikuttivat korkeat hinnat käyttöä alentavasti. Tuntui siltä, ettei hintojen laskettuakaan puutavara pystynyt valtaamaan takaisin menetettyä alaa.

Yleinen taloudellinen kehitys jatkui sittemmin jokseenkin suotuisasti aina vuoteen 1957, jolloin USA:ssa tapahtuneen regression pelättiin vaikuttavan epäedullisesti myös Euroopassa. Tänä aikana Euroopan sisäinen raakapuun kauppa kasvoi huomattavasti, kun sensijaan ulkopuolelta tuleva osa pieneni. Tämä kehitys johtui ainakin osittain puutavarakaupan säännöstelytoimenpiteiden lieventämisestä monessa maassa.

Suezin kriisi vuonna 1956 ei vaikuttanut mainittavassa määrässä Euroopan puutavarakauppaan. Vuoden 1958 loppupuolella kävi ilmi, että takaisku USA:ssa oli ohimenevää laatua, ja Euroopan talouselämä siirtyi korkeasuhdanteeseen, joka yhä voimistui seuraavan vuoden aikana. Vuonna 1958 astui voimaan tulliliitto, European Economic Community, ja syksyllä vuonna 1959 perustettiin vapaakauppa-alue, European Free Trade Association.

Taulukossa 3 s. 24 on tarkasteltu, miten kokonaishakkuut Euroopassa kehittyivät 1950-luvulla. Paremman yleiskuvan saamiseksi on taulukoissa 4—6 (ss. 24—25) vielä annettu tietoja sahatavaran ja puuvanuketeollisuuden tuotannosta.

23 Raakapuun kauppa valaistuna tavaralajeittain ja määrittäin.

Tilastotiedot perustuvat pääasiallisesti FAO:n julkaisuihin, jolloin kuitenkin vuoden 1959 tiedot on katsottava ennakkotiedoiksi, jotka vielä voivat jossain määrin muuttua.

Taulukoissa 7—13 (ss. 26—33) on raakapuun vientiä tarkasteltu lajeittain ja taulukko 14 s. 33 antaa yhteistuloksen. Tästä ilmenee, että Euroopan raakapuun vienti 1950-luvulla oli keskimäärin 11 milj. m³ vuodessa. Selvästi suurimmat ryhmät muodostivat paperipuu (4.3 milj. m³) ja kaivospölkyt (2.8 milj. m³). Viennin arvon tarkastaminen tuottaa suuria vaikeuksia, koska Euroopan valuuttoja on moneen otteeseen devalvoitu, jonka lisäksi on käytetty erilaisia clearing-kursseja jne. Taulukossa 15 s. 34 on kuitenkin yritetty antaa jonkinlainen kuva kaupan arvon suuruudesta.

Vastaavat tuontinumerot on esitetty taulukoissa 16—22 (ss. 35—41).

Taulukko 23 s. 42 antaa yhteenvedon, josta nähdään tärkeimpien maiden raakapuun kauppa keskimäärin vuosittain 1950-luvulla. Kuten ilmenee, Suomi johtaa ylivoimaisesti vientitilastoa. Toisella sijalla on yllättävästi Ranska, joka vuosittain vei keskimäärin 1.2 milj. m³. Tästä määrästä oli kuitenkin 450 000 m³ polttopuuta. Kolmannelle sijalle tulee Ruotsi melkein yhtä suurilla vientinumeroilla.

Kun otetaan huomioon tuontinumerot, muuttuu tilanne huomattavasti, mutta Suomi jää edelleen johtoon 4.2 milj. m³:n positiivisella raakapuutaseella. Toisena on Jugoslavia, 0.9 milj. m³ ja kolmantena Ruotsi, 0.4 milj. m³. Muista maista näyttävät ainoastaan Itävalta ja Portugali myös pientä vientivoittoisuutta. Ranskalla sensijaan on melkein yhtä suuri tuonti

kuin vienti, joten jäännös on pieni. Suurimmat tuontimaat ovat Länsi-Saksa, Iso-Britannia ja Italia mainitussa järjestyksessä. Länsi-Saksa on 1950-luvulla ohittanut Iso-Britannian tukkien ja paperipuun tuonnissa, mutta viimeksimainittu maa johti vielä kaivospuun, ratapölkkyjen sekä pylväiden, junttapaalujen ja tolppien tuontia.

Merkille pantavaa on, että Norjan raakapuun kauppatase viime vuosikymmenellä oli negatiivinen. Yhteensä 3.4 milj. m³:n kaupassa on sama maa esiintynyt sekä vienti- että tuontimaana. Tämä johtuu osittain kuljetusolosuhteista rajavyöhykkeissä sekä osittain siitä, että määrättyjen puulajien saanti tuontimaassa ei ole ollut riittävä, kun taas toisia laatuja on riittänyt vietäväksi.

Kaupan volyymin vaihtelujen valaisemiseksi on laskettu taulukot 24—25 (ss. 43—44). Vuosittaiset poikkeamat 10-vuotisjakson keskiarvosta on laskettu yhteen ja verrattu koko jakson keskiarvoon. Näin saadut luvut on laskettu prosentteina eri raakapuulajeille sekä myös tärkeimmille vientimaille. Luvuista ilmenee, että pienin vaihtelu, 12 %, on havaittavissa lehtipuutukkien viennissä, kun sensijaan ryhmä pylväät, junttapaalut ja tolpat osoittaa 28 %:n vaihteluja. Tuontipuolella polttopuuryhmä on vaihdellut vähiten, kun taas lehtipuutukit osoittavat 30 %:n keskimääräisiä vaihteluja. On kuitenkin otettava huomioon, että jos kaupan volyymissä koko kymmenvuotisjakson aikana on havaittavissa selvä nousu- tai laskusuunta, tämä vaikuttaa keskipoikkeaman suuruuteen.

24 Kaupan suuntaus.

Saadaksemme lopullisen käsityksen raakapuun kaupasta Euroopassa, on vielä vientimaiden vientiä tarkasteltu tuojamaittain. Tämä ilmenee taulukoista 26—31 (ss. 46—54). Suomen kohdalta voimme todeta, että havupuutukit on pääasiallisesti viety Ruotsiin, paperipuu Ranskaan ja Länsi-Saksaan ja kaivospölkyt Iso-Britanniaan. Suomen paperipuun viennissä on tapahtunut sikäli mielenkiintoinen muutos, että Ranska on huomattavin ostajamaa Länsi-Saksan ollessa toisena, kun sen sijaan vuosikymmenen alussa tilanne oli päinvastainen.

Kun raakapuulajit lasketaan yhteen todetaan, että Länsi-Saksa on ollut Suomen tärkein ostaja, joka on keskimäärin ostanut 747 000 m³ vuosittain. Seuraavina ovat olleet Iso-Britannia (655 000 m³) ja Ranska (466 000 m³). Näistä luvuista puuttuvat — vähemmän tärkeinä ja tilastovaikeuksien vuoksi — pylväät, junttapaalut ja tolpat sekä polttopuut. Noin 10 % koko viennistä on mennyt Euroopan ulkopuolella oleviin maihin.

Myös Ruotsin viennissä on Länsi-Saksa ollut selvästi tärkein ostaja. Seuraavalla sijalla on Norja, joka koko 1950-luvulla on ostanut huomattavia määriä (207 000 m³) raakapuuta Ruotsista. Samanaikaisesti on kuitenkin Norja vienyt Ruotsiin vielä suurempia määriä (306 000 m³), joten Ruotsi on Norjan raakapuun viennin kannalta tärkein maa.

Itävallan raakapuun vienti oli koko 1950-luvulla ankaran säännöstelyn takia pieni. Tärkeimmät markkinat ovat olleet Länsi-Saksa ja Italia.

Ranska on polttopuun lisäksi vienyt varsinkin lehtipuutukkeja. Tärkein ostaja on ollut Belgia ja seuraavana Iso-Britannia.

Jugoslavia on polttopuun ohella vienyt etupäässä paperipuuta Italiaan ja Länsi-Saksaan.

Taulukoissa 32—35 ss. 55—58 on valaistu, miten suuri osa Euroopan raakapuun tuonnista on kotoisin muista maanosista. Kuten taulukon 35 (s. 58) yhteenvedosta ilmenee, osoitti Euroopan raakapuun kauppatase 3 milj. m³ vajausta vuosittain 1950-luvulla. Tästä määrästä tuotiin noin puolet lehtipuutukkien muodossa Afrikasta. Kanada osallistui paperipuun ja kaivospuun vientiin yhteensä keskimäärin 0.9 milj. m³:llä vuosittain.

Neuvostoliiton viennin kehitys näkyy taulukosta 33 s. 56. Kuten keskiarvoista ilmenee, pääsi muiden tavaralajien vienti Eurooppaan vauhtiin vasta vuosikymmenen puolivälin jälkeen paitsi kaivospölkkyjen osalta, joita on viety tasaisesti koko 1950-luvulla. Venäjän koko

vienti Eurooppaan oli keskimäärin 0.9 milj. m³ vuosittain, eli yhtä suuri kuin Kanadan vienti. Jos otetaan huomioon ainoastaan vuodet 1955—59, oli Venäjän keskimääräinen vienti 1.4 milj. m³.

3. Vientimaiden puutaloudelliset taseet ja teollisuuden laajennussuunnitelmat

31 Pohjoismaat.

331. Suomi.

Suomen metsätasetta ja puun käyttöä on tutkittu perusteellisesti jo vuosikymmenien aikana. Edistyvän metsätalouden periaatteiden mukaan on hakkuissa määrätietoisesti pyrittävä parantamaan metsien tilaa samalla kun pyritään suurimpaan mahdolliseen tuotokseen. Miten tilanne kehittyi ensimmäisen ja toisen linja-arvioimisen välisenä aikana, tuntuu hiukan epävarmalta, mutta kuten Saari (1948 s. 211) toteaa, ei vuosien 1922 ja 1938 välisenä aikana puuston kokonaismäärissä liene tapahtunut muutosta. Lihtonen on vuonna 1946 julkaissut tuottohakkuulaskelman, jonka mukaan 1948—57 välisenä aikana oli mahdollista hakata 34.5 milj. m³ vuosittain Suomen nykyrajojen sisällä.

Kolmas linja-arviointi on kuitenkin antanut uuden kuvan hakkuumahdollisuuksista. Ilvessalo (1956 s. 123) toteaa, että puusto on kasvanut 10.8 % verrattuna edelliseen arviointiin ja että kokonaiskasvu on nyt 46 milj. m³ vuosittain. Ilvessalo on myös laskenut hakkuumahdollisuudet viimeisten tietojen perusteella ja päätynyt lukuihin 43 milj. m³ ja myöhemmässä vaiheessa 46 milj. m³.

Vastaavia puun käyttötutkimuksia on ennen kaikkea suorittanut Pöntynen. Tärkein ryhmä on metsäteollisuuden raakapuun käyttö. Laskuissa on kuitenkin otettava huomioon, että massateollisuuden teoreettista kapasiteettia ei käytännössä koskaan saavuteta. Sahateollisuudessa taas on raaka-aineen kulutus laskettava todellisen tuotannon pohjalta, koska teoreettinen kapasiteetti on täysin riippuvainen työpäivän pituudesta. Voidaan myös todeta, että raaka-aineen kulutus tuotettua yksikköä kohti jatkuvasti laskee. Ottaen huomioon mainitut näkökohdat ja metsäteollisuuden laajennussuunnitelmat, saadaan taulukossa 41 s. 75 esitetty raaka-aineen tarve, 48.0 milj. m³, 1960-luvun puolivälissä. Vastaavien hakkuumahdollisuuksien on arvioitu olevan 53.0 milj. m³. Tähän lukuun on päästy ottamalla huomioon lisääntyvä pienpuun menekki (vertaa Ilvessalo 1960 s. 4 ja Wegelius 1958 s. 106) sekä metsänhoidolliset toimenpiteet vuosikymmenien aikana. Myös on todettavissa, että n.s. nollaraja on siirtynyt yhä pohjoisemmaksi ja idemmäksi ja tällä vuosikymmenellä ehkä häviää kokonaan. Metsätaseen perusteella tuntuu siis vielä olevan mahdollisuuksia ylläpitää raakapuun vientiä.

Toisenlaisia mielipiteitä on kuitenkin tuotu esiin. Niinpä talousohjelmakomitea katsoo, että jo 1950-luvulla tapahtui siksi raskaita liikahakkuita, että pohja on pudonnut pois Ilvessalon hakkuulaskelmista. Komitea otaksuu, että raakapuun vienti supistuu itsestään 1960-luvulla huomattavasti.

Teoreettiset taselaskelmat eivät kuitenkaan ratkaise, miten hakkuut ja raakapuuvienti todellisuudessa muodostuvat. Suomen yksityiset metsänomistajat päättävät hakkuistaan aivan toisten näkökohtien perusteella. Tärkeimpinä mainittakoon metsänomistajan rahan tarve, raakapuun hintataso, verotusnäkökohdat ja pääoman sijoitustarve maatalouskoneisiin ja rakennuksiin. Esimerkiksi Lihtonen (1949 s. 15) toteaa, että »Yksityismetsien hakkuumäärät seuraavat tarkoin kantohintatasoa.» Normaalisen suhdannekehityksen aikana ei siis tarvitse edellyttää syntyvän vaikeuksia metsänomistajien kohdalla. Loppupäätelmä on, että Suomi vielä tämän vuosikymmenen aikana voi ylläpitää suurin piirtein yhtä laajaa raakapuun vientiä kuin 1950-luvulla.

332. Ruotsi

Myös Ruotsissa on metsävaroja valaistu kolmen linja-arvioinnin yhteydessä, jotapaitsi on julkaistu erilaisia mietintöjä metsäteollisuuden raaka-aineen tarpeesta. Näistä mainittakoon varsinkin Skogsindustrins Virkesutredning 1958, joka toteaa, että raakapuuvarat ovat ilmeisesti kasvaneet 1—2 % vuosittain muutamana viime vuosikymmenenä. Massateollisuuden teoreettinen kapasiteetti ilmenee taulukosta 43 s. 82 ja vastaava raakapuun tarve taulukosta 44 s. 83. Kuten ilmenee, suunnitellaan huomattavia laajennuksia. Käytettävissä olleen aineiston perusteella on sivulla 86 hahmoteltu Ruotsin puutaloudellinen tase vuonna 1965. Tilanne näyttäisi tämän perusteella jokseenkin synkältä, koska arvioidaan, että havupuun tarve ylittäisi suoritetut hakkuut 2—4 milj. m³:llä. Vaikuttaa siltä, että pienpuun käyttömahdollisuudet on aliarvioitu näissäkin laskelmissa. Myös metsänhoitotoimenpiteiden vaikutus hakkuumahdollisuuksiin on vaikeasti arvioitavissa. Kuitenkin on aivan viime aikoina ilmennyt uusia sulfaattiteollisuuden laajentamissuunnitelmia, mitkä tulevat vaatimaan 2 milj. m³ lisää raakapuuta vuosittain. Täten näyttää todennäköiseltä, että Ruotsin teoreettinen puutaloudellinen tase ei 1960-luvulla tule kestämään suurempaa raakapuun vientiä. Riippuu kuitenkin liike- ja kauppapoliittisista näkökohdista, miten todella käy.

333 Norja.

Norjan merkitys vientimaana on huomattavasti pienempi kuin Suomen ja Ruotsin. VIGERUST (1957 s. 30) arvioi, että metsien kasvu on 13.2 milj. m³ vuosittain. Vuoden 1951 metsäkomitea suosittelee, että tästä määrästä jätettäisiin vuosittain 0.8 milj. m³ käyttämättä puuston tilan parantamiseksi, jota paitsi 0.5 milj. m³ ei voida käyttää kuljetusvaikeuksien takia. Mitään metsäteollisuuden laajennussuunnitelmia ei ole tiedossa. Kun tarkastellaan, miten puun käyttö on kehittynyt 1950-luvulla, saadaan sivulla 92 esitetty tase. Metsäteollisuuden nykyinen laajuus ei oikeastaan salli raakapuun vientiä. Kuten kaupan analyysin yhteydessä todettiin, on vientiä itse asiassa voitu ylläpitää vain vastaavan tuonnin turvin.

32 Itävalta.

Itävallan metsät arvioitiin vuosien 1952—56 välisenä aikana. Saatujen tietojen perusteella suositellaan, että vuotuiset hakkuut pysyttelisivät 8.5 milj. m³ paikkeilla. Kuitenkin olivat todelliset hakkuut 1950-luvulla keskimäärin 10.5 milj. m³. Sivuilla 97 ja 98 on tarkasteltu metsäteollisuuden raakapuun tarvetta. Kuten näkyy, näyttää sahateollisuuden tuotanto kasvavan ja vaatii nykyään 7.5 milj. m³ vuosittain. Myös massateollisuuden tuotantonumerot osoittavat nopeata nousua ja sen raakapuun tarve on 3 milj. m³ paikkeilla. Vaikuttaa siis ilmeiseltä, että metsäteollisuutta on laajennettu yli metsävarojen. Raakapuun vientiä ei Itävallan täten ole syytä harjoittaa, paitsi kuljetusolosuhteista johtuvaa rajavyöhykekauppaa.

33. Venäjä ja Itä-Euroopan maat.

Venäjän metsätalous on toistaiseksi toisella pohjalla kuin muiden vientimaiden. RUSSANOW arvioi, että vuotuinen kokonaiskasvu on 840 milj. m³ ja että tästä on 1950-luvulla käytetty noin 320 milj. m³. Vientimahdollisuuksia ei siis voida arvioida metsätaseen perusteella, vaan sensijaan on yritettävä valaista metsätalouden ja metsäteollisuuden yleistä kehitystä.

Viimeisen 7-vuotissuunnitelman (1959—1965) mukaan on tarkoitus laajentaa metsäteollisuuden tuotantokykyä valtavasti. Nämä laajennukset tulevat ilmeisesti vaatimaan noin

50 milj. m³ lisää raakapuuta. Hakkuita on viimeisten kymmenen vuoden aikana mekanisoitu laajalti, mikä tekee mahdolliseksi näinkin valtavan hakkuumäärän lisäyksen. Kotimainen käyttö tulee ilmeisesti nielemään pääosan tuotannon kasvusta. Kuten EKLUND (1957 s. 79) huomauttaa, voi Neuvostoliitto kuitenkin joko ulkopoliittisista tai talouspoliittisista syistä heittää milloin tahansa suuret määrät metsätuotteita Euroopan markkinoille. Neuvostoliitto on toisen maailmansodan jälkeen ainakin toistaiseksi harjoittanut metsätuotteiden vientiä rauhallisesti yrittäen säilyttää markkinoiden tasapainon. Mekanisointi on ilmeisesti ollut kallista, eikä ole kannustanut dumping-myyntiin.

Epäilemättä Venäjän metsävarat sallivat käytännöllisesti katsoen rajattoman raakapuunviennin. Tuntuu kuitenkin todennäköiseltä, että pyritään viemään pitemmälle työstettyä tavaraa, joten raakapuun kauppaa tuskin virallisesti suositellaan.

Muut Itä-Euroopan valtiot eivät sanottavammin kiinnosta raakapuun vientimaina.

4. Tilanne tuontimaissa

41. Eri raakapuulajien kysynnän kehityksestä.

Kaikki ennusteet viittaavat siihen, että paperipuun kysyntä tulee kasvamaan voimakkaasti. Miten suuressa määrin tämä vaikuttaa paperipuun kauppaan, on yritetty valaista taulukossa 54 s. 107. Tärkeimpien tuontimaiden kesken on suoritettu vertailuja, miten massan tuotannon, kotimaisten paperipuuhakkuiden ja paperipuun tuonnin keskinäiset suhteet kehittyivät 1950-luvulla. Mikäli näistä luvuista voi päätellä, tapahtui tuotannon kasvu 1950-luvulla yhä suuremmassa määrin tuotetun paperipuun turvin.

Koska sahateollisuutta ei enää laajenneta Euroopassa, ei sahatukkien kaupassa ole odotettavissa kasvua. Kuten FAO (1958 s. 77) on todennut, on havupuusahatavaran käyttö henkilöä kohti pudonnut aina vuodesta 1913 saakka. Lehtipuutukkien käytössä ei sen sijaan ole vielä todettavissa laskusuuntaa. Päinvastoin voi varsinkin trooppisten puiden käytössä tapahtua nousua.

Ratapölkkyjen käyttö ei myöskään enää kasva, koska Euroopan rautatiet ovat pääasiassa valmiiksi rakennettuja. Puiset ratapölkyt ovat sitä paitsi viime aikoina joutuneet kilpailemaan teräs- ja betonipölkkyjen kanssa. Tuntuu kuitenkin, että puiset ratapölkyt pystyvät suurin piirtein pitämään puoliaan hyvien ominaisuuksiensa perusteella. Ratapölkkyjen kaupan voidaan siis laskea pysyvän ennallaan.

Kaivospuun käytössä on sensijaan ollut jo kauan selvä laskusuunta. Tämä johtuu osittain siitä, että käytetään vähemmän puuta louhittua hiilitonnia kohti ja osittain siitä, että hiilen tuotanto on laskenut. 1950-luvun kaivospuukaupassa ei ole vielä ollut havaittavissa laskusuuntaa. Tämä johtui siitä, että Länsi-Saksa laajensi tuontiaan. Tällä vuosikymmenellä on odotettavissa myös kaupan pienenemistä.

Pylväiden, junttapaalujen ja tolppien kysynnässä ei pitäisi olla pienenemisen vaaraa. Mitä tulee polttopuun kulutukseen, on se jatkuvasti pienentynyt laajenevan kaasun ja sähkön käytön sekä paremmin rakennettujen asuntojen vuoksi.

42. Yleisiä näkökohtia.

Seuraavassa esitetään tärkeimpiä tuontimaita koskevia yleisiä näkökohtia.

Länsi-Saksalla on 7 milj. ha omia metsiä, jotka ovat hyvin tärkeitä, koska 69 % on havupuumetsää. Vuotuinen kasvu on 25 milj. m³, mutta hakkuut olisi pidettävä 23 milj. m³ rajalla, mikä kuitenkin näyttää olevan vaikeata toteuttaa käytännössä.

Vähintään 10 milj. m³ ainespuuta on tuotava vuosittain. Tästä määrästä 1.5 milj. m³ on lehtipuuta, jota pääasiassa (60 %) tuodaan EEC-maista ja pahimmassa tapauksessa voidaan korvata lisäämällä kotimaan hakkuita. Havupuun tuonti rakennustarkoituksiin vähenee, koska sotavahingot on saatu korjatuiksi. Muuten havupuun tarve lisääntyy. Länsi-Saksan mäntymetsät ovat vain 27 % koko metsäalasta, mikä pakottaa suureen kaivospuun tuontiin. Paperipuun tarve on noin 3 milj. m³ vuosittain, mutta keskittyy kokonaan kuusipuuhun, koska Länsi-Saksassa ei ole sulfaattitehtaita.

Ranskan metsäala on 11.5 milj. m³, mutta puusto käsittää 70 % lehtipuuta, josta tammea on 35 %. Suurin osa kasvusta (32.5 milj. m³) on käytetty polttopuuna, mutta viime aikoina on tapahtunut huomattava muutos, koska maaseutuväestö on ryhtynyt puun sijasta käyttämään kaasua. Toistaiseksi on metsiä kuitenkin hoidettu pitkiä kiertoaikoja käyttäen, joten paperipuun tuotanto on ollut vähäistä. Metsänhoidollisten toimenpiteiden ansiosta vuosisadan alussa, on havupuuhakkuut voitu nostaa 7 milj. m³:stä 11 milj. m³:iin 1950-luvulla. Puuvanukkeen tuotanto lehtipuusta on myös päässyt vauhtiin.

Iso-Britannian metsät ovat pahasti kärsineet sotien johdosta. Vuodesta 1943 on pyritty lisäämään metsämaan alaa, mutta suunnitelmia ei ole voitu toistaiseksi toteuttaa tarkoitetussa laajuudessa. Ison-Britannian metsäkomissiolla on vuodesta 1950 alkaen oikeus valvoa hakkuita myös yksityismetsänomistajien mailla. Täten on parempi mahdollisuus pysyttää vuotuiset hakkuut samansuuruisina.

Alankomaiden metsät eivät pysty alkuunkaan tyydyttämään puun tarvetta. Kotimaasta saadaan vuosittain noin 0.7 milj. m³, ja tarve on 5.3 milj. m³.

Italiassa nopeakasvuisten lehtipuiden (Eucalyptus) massatuotanto on päässyt hyvään vauhtiin. Italian oma havupuun tuotanto laski tasaisesti koko 1950-luvulla (2:sta 1.2 milj. m³:iin).

Kaikissa tuontimaissa on pantu alulle tai on suunnitteluasteella laajoja metsänparannustoimenpiteitä. Tuntuu kuitenkin todennäköiseltä, että tästä johtuva puun tuotoksen lisäys tuskin tyydyttää edes väestön kasvusta johtunutta lisätarvetta.

Uusia puuvanuketehtaita perustettaessa tuontimaihin on otettava huomioon, että raakapuun saanti riittävän suuria tehtaita varten on hankalaa, jota paitsi myös jäteveden pois kuljettaminen tuottaa suuria hankaluuksia.

5. Kauppapoliittiset järjestelyt Euroopassa

51. Yhteistoiminta toisen maailmansodan jälkeen.

Sodan aiheuttamat laajat säännöstelytoimenpiteet kansainvälisen kaupan alalla on yritetty purkaa eri teitä. Jo vuonna 1946 perustettiin Kansainliiton aloitteesta ns. Gatt-sopimus, jonka puitteissa on neuvoteltu varsinkin tullien alentamisesta. Gatt-sopimuksen puitteissa on myös mahdollista perustaa yhteismarkkinoita. Kuten markkinakatsauksessa mainittiin, on tämä mahdollisuus johtanut EEC:n ja EFTA:n perustamiseen.

52. Euroopan tulliliitto (EEC).

EEC:hen kuuluvat Länsi-Saksa, Ranska, Italia ja Benelux-maat (Alankomaat, Belgia ja Luxemburg). Näiden maiden välillä on ylimenokauden jälkeen tarkoitus poistaa kaikki tullit ja muut kauppaesteet kuten kiintiöt, vientimaksut jne. Lopullisena päämääränä on jokseenkin täydellinen taloudellinen integraatio. Kun sopimusta tehtiin, ei metsätaloutta ilmeisesti muistettu ollenkaan tai katsottiin, että se kuuluu 28 pykälän mukaan maatalouteen. Sittemmin on metsätalouden asemaa tarkemmin tutkittu ja päädytty siihen, ettei EEC-maiden puitteissa pyritä mihinkään yhteiseen puumarkkinajärjestelyyn (vrt. Mantel 1958 s. 655 ja Klose 1959 s. 332). Metsätalouspolitiikassa koetetaan kuitenkin ajaa samoja päämääriä.

53. Euroopan vapaakauppa-alue (EFTA).

EFTA-liittymään kuuluvat seuraavat maat: Iso-Britannia, Ruotsi, Norja, Tanska, Sveitsi, Itävalta ja Portugali. Tullialennusten ja muiden kauppaesteiden poistamista on suunniteltu suurin piirtein samalla tavalla kuin EEC-ryhmässä. Tärkein ero on, että EFTA-maat määräävät kukin itse tullinsa liittymän ulkopuolella oleviin maihin. Tämä vaikeuttaa huomattavasti vapaakauppa-alueen ylläpitämistä.

Tärkein on 16. pykälä, jossa määrätään, että eri jäsenmaiden kansalaiset saavat vapaasti perustaa yrityksiä EFTA-liittymän alueella. Seurauksena tästä tulee olemaan, että tuontimaiden metsäteollisuudet pyrkivät metsien tai puolivalmistetehtaiden omistajiksi vientimaihin.

EFTA- ja EEC-sopimukset ovat siksi äsken syntyneitä, että niiden muotoilu on vielä käynnissä. Varsinkin mahdollisesta yhteistyöstä EFTA- ja EEC-alueiden välillä neuvotellaan jatkuvasti. Uudet sopimukset voivat siten nopeasti muuttaa tilannetta.

54. Itämaat (Komekon).

Myös Itä-Euroopan maat ovat Neuvostoliiton johdolla muodostaneet taloudellisen yhteenliittymän, mitä lähinnä voi verrata EEC:hen. Tässä liittymässä ovat mukana Neuvostoliiton lisäksi Romania, Puola, Tsekkoslovakia, Bulgaria, Unkari ja Itä-Saksa. Sitä paitsi Jugoslavialla on pitkäaikaisia kauppasopimuksia kaikkien näiden maiden kanssa.

6. Kauppapolitiikan vaikutus raakapuukauppaan

61. Puutavaratullit.

Pitemmällä tähtäimellä on kauppasopimuksissa tapahtunut huomattava parannus. Kuten Löbe (1956 s. 54) toteaa, oli esimerkiksi Saksassa 1800-luvun alkupuolella puutavaralastin lyhyellä matkalla ohitettava 26 tullipaikkaa.

Useimmat Euroopan maat ovat hiljattain uusineet tullitariffinsa uuden Brysselin nimikkeen mukaan. Tämän jaottelun mukaan kiinnostavat raakapuukaupassa nimikkeet 4401, 4403, 4404, 4407 ja 4409, joiden alkuperäinen englanninkielinen teksti ilmenee sivulla 128. Koska raakapuukauppa ratkaisevasti voi riippua muiden metsäntuotteiden kaupasta, kiinnostavat myös ryhmät 4405 (sahatavara) 4413 (höylätty sahatavara) 4414 (viilut) ja 4415 (vaneri). Puuvanuketuotteet ovat pääryhmässä 47 ja paperituotteet pääryhmässä 48. Kaikkien näiden ryhmien yksityiskohtaisempi tarkastelu veisi liian pitkälle. Tämän takia on ainoastaan varsinaisia raakapuuryhmiä verrattu maittain sivuilla 128—139. Muista ryhmistä on tehty yksinkertaistettu yhteenveto s. 139, Taulukko 55. Tullitaksojen vertailu osoittaa, että Italiassa ja Ranskassa on korkeimmat raakapuutullit. Monissa muissa maissa on raakapuu joko kokonaan tullivapaa tai laadusta ja käsittelystä riippuen alhaisessa tulliluokassa.

Kuten mainittiin, EEC-maat joutuvat soveltamaan yhteistä ulkotullia ylimenokauden jälkeen. Ulkotullit on pääasiassa laskettava 1957 voimassa olleiden tullien keskiarvojen perusteella. Puutavaratulleista on neuvotteluissa päästy yhteisymmärrykseen; ne on esitetty sivuilla 141—143. Kuten nähdään on ulkotullit itse asiassa lyöty kiinni alhaisemmalle tasolle

kuin mitä vuoden 1957 tullien keskiarvot edellyttäisivät. Suurin osa laaduista, kuten kaivospuu, polttopuu ja paperipuu ovat kokonaan tullivapaita. Muiden laatujen osalta tulli vaihtelee 5—8 % paitsi kyllästettyjen ratapölkkyjen, joiden tulli on 10 %.

Muiden puutavaroiden ulkotullit käyvät ilmi sivulta 145. Ne vaihtelevat, kuten näkyy, 10—15 %.

Ainoastaan Sveitsi on 1950-luvulla harjoittanut aktiivista tullipolitiikkaa puutavarakaupan alalla.

62. Määrälliset vienti- ja tuontirajoitukset.

Kaikki Euroopan maat ovat toisen maailmansodan jälkeen säännöstelleet puutavarakauppaansa. Näitä rajoituksia on 1950-luvulla hiljalleen poistettu tai ainakin myönnetty helpotuksia. Yleensä voidaan sanoa, että tuontirajoitukset on poistettu aikaisemmin kuin vastaavat vientisäännöstelyt. Säännöstelyn hyviä ja huonoja puolia on tarkasteltu lähemmin Suomen kohdalta sivuilla 148—151. Kuten talousneuvosto (1958 s. 14) toteaa, ei vientisäännöstely ole merkittävässä määrin vaikuttanut vientimääriin. Väite, että säännöstelyn avulla pystytään vaikuttamaan vientihintoihin, tuntuu kuitenkin omituiselta, ottaen huomioon, että kansainvälisille markkinoille joutuu vain mitätön osa Euroopan kokonaishakkuista. Yleensä tuntuu, ettei raakapuun vientisäännöstely Suomessa enää vastaa tarkoitustaan.

Muiden tärkeiden maiden säännöstelytoimenpiteitä 1950-luvulla on tarkasteltu sivuilla 152—155. Paitsi määrällisiä rajoituksia, on eri otteissa myös raakapuun viennistä määrätty vientimaksuja esimerkiksi Suomessa v. 1952 ja 1958. Jos raakapuun vientiä on pakko supistaa, tuntuisi vientimaksujen käyttöön ottaminen yksinkertaisemmalta toimenpiteeltä kuin lisenssipakon ylläpitäminen. Taulukoissa 57 ja 58 on yritetty tarkastella, miten säännöstelytoimenpiteet ovat vaikuttaneet koko Euroopan kaupan volyymiin. Mitään selvää lamauttavaa vaikutusta ei ilmene. Näyttää pikemminkin, että säännöstely olisi mukautunut kysyntään.

63. Yleisiä näkökohtia.

Yhteismarkkinoiden muodostamisen päätarkoitus on epäilemättä, että täten lisätään mahdollisuuksia erikoistua ja keskittää tuotanto sinne, missä on parhaat luonnolliset mahdollisuudet. Jos tästä tehdään johtopäätös, on luonnollista, että metsäteollisuus keskitetään vientimaihin. On kuitenkin väärin tehdä tästä sellaista johtopäätöstä, etteivät tuontimaat pystyisi kilpailemaan yhteismarkkinoiden puitteissa. Kuten sivulla 159, Taulukko 59, ilmenee, on 1950-luvulla esimerkiksi sanomalehtipaperin tuotanto kasvanut Länsi-Saksassa ja Ranskassa yhtä paljon kuin Pohjoismaissa, vaikka tuontimaat ovat sallineet tullivapaan tuonnin.

Yhteismarkkinoiden metsävarat käyvät ilmi taulukoista 60—64 ss. 160—162. Vyöhykkeiden raakapuukauppaa on valaistu talukossa 64 s. 162 ja metsätuotteiden koko kauppa taulukossa 65 s. 163. Taulukoista nähdään EEC-alueen suuri tuontitarve ja Suomen avainasema tämän tarpeen tyydyttämisessä. Ilmeistä on, että kauppasota EEC:n ja EFTA:n välillä johtaisi molemminpuolisiin, vaikeisiin uudelleenjärjestelyihin.

Mitään suurempia muutoksia EEC-maiden raakapuukaupassa ei toistaiseksi ole odotettavissa. Lähinnä voidaan laskea, että rajakauppa Ranskan ja Länsi-Saksan, Ranskan ja Belgian sekä Länsi-Saksan ja Benelux-maiden välillä tulee vilkastumaan. EFTA-ryhmässä on suurin muutos Ison-Britannian paperitullien pois jääminen.

Lopuksi on taulukoissa 66—68 ss. 167—168 valaistu Suomen asemaa eri kaupparyhmittymiin nähden. Kuten näkyy, on EEC-ryhmä tärkeämpi paperipuukaupassa, kun taas EFTA johtaa muiden raakapuulajien kaupassa. Voidaan teoreettisesti laskea paljonko Suomen metsäteollisuus menettää rahallisesti pysymällä EFTA:n ulkopuolella, mutta vaarallisin seuraus olisi epäilemättä kauppavaihdon pieneneminen EFTA-maiden kanssa. Suomen on ilmeisesti pudotettava hintojaan tullialennuksien verran. Vaikuttaa siltä, että Ruotsi hyötyisi eniten Suomen poisjäämisestä.

7. Yhteenveto

Euroopan raakapuukauppa tällä vuosikymmenellä ei osoita pienenemisen merkkejä. Tämä johtuu osittain siitä, että rajavyöhykekauppa kasvaa kaupan esteiden vähetessä ja osittain siitä, että Euroopan raakapuutase on nykyään negatiivinen ja vaatii tuontia myös Euroopan ulkopuolella olevista maista. Tuontimaiden puuvanuketeollisuudet tulevat sitä paitsi jatkuvasti kilpailemaan paperipuusta vientimaiden teollisuuksien kanssa.