

THE FOREST INDUSTRY

AN INDUSTRY OF THE FUTURE

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Forword

The historical development of the forest and the forest industry in Sweden is actually the story of how a poor, sparsely-populated country, in an outlying part of Europe, became a prosperous welfare state with an important role to play in supplying Europe with its growing needs.

With the forest as its base and with the forest industry as its engine, a large industrial sector has developed in Sweden. Including its own service sector, it is a corner-stone of the Swedish economy. The forest industry is a base industry in that it is the force behind a socio-economic complex of greater importance than the economies of the forest companies themselves. The key to increased growth lies in the development of the large base industries and their ability to continue to be the ‘economic motor’.

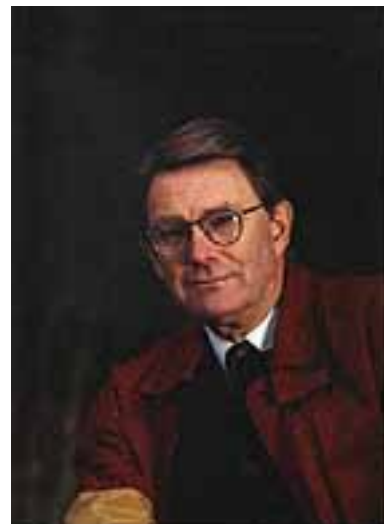
Unfortunately, there are advocates of the notion that Sweden’s future lies instead in a ‘lighter’ commercial structure with advanced high-tech products, service companies and the growth of small companies. In fact, it is the development of the base industries, and their need for new techniques, advanced product development and qualified service from the various subcontractors, which creates the most important conditions for growth in the ‘new’ sectors too.

The forest industry, therefore, is an important industry of the future. Development, however, is not a foregone conclusion. New low-cost producers are entering the global market and competition is getting tougher. Swedish companies must continue to be able to compete on equal terms on the world market. In other ways too, the forest industry is an industry of the future. Consumer demands for ecocycle-adapted policies and for prudent utilisation of our natural resources, speak in favour of the forest industry.

The Swedish forest industry, committed, as it is, to sustainable forestry, environmentally-adapted processes and recyclable products, has every opportunity of continuing to be successful in the future.

If we succeed, the Swedish forest industry will be able to grow and gain new market shares. This will mean higher export revenues and higher investment levels. It will also mean more jobs and further growth in the engineering and chemical industries, in the construction sector, in the transport sector, in retailing and throughout society as a whole.

Jan Remröd
Director General
Stockholm, June 1997



The driving force in the Swedish economy

The forest industry is a base industry around which many other industries have developed, a driving force in the Swedish economy. We have the forest to thank for much of what we have in Sweden. This applies to the export income and the job opportunities which are created in the forest industry itself. The forest industry and the forestry sector not only provide direct employment for 100,000 people, but also provide work for the IT companies which develop process control systems, for thousands of small companies, for entrepreneurs who operate the forest machines, for the hauliers who transport the timber and for the various types of service companies. The engineering industry, the chemical industry, the construction industry and the many transport companies are all major suppliers to the forest industry.



Gives export revenues. Forest industry exports in 1996 amounted to 85 billion Swedish kronor. This corresponds to imports of oil, food, clothing, radio and TV sets. The forest industry uses mainly Swedish raw materials. Hence the surplus amounted to 70 billion kronor.

Investment in Sweden. Investment by the forest industry in Sweden in 1996 totalled 15 billion kronor, which was the highest level ever. Between 1995–97 approximately 45 billion kronor was invested, which is almost a quarter of the total investments made by industry in Sweden.

A world leader. Sweden is one of the leading exporters of pulp, paper and sawn timber. There are few other areas in which our country plays such a significant role in the world market. The opportunities to satisfy future demand are great. The world consumption of paper is expected to rise, by almost 3 per cent annually, until the year 2010. This corresponds to almost the whole of the annual increase in production capacity of the Swedish paper industry. The growth potential for sawn timber products is high too.

World-class research. Many of the pioneering innovations in the forest industry have Swedish origins. Cooperation between the Swedish forest industry, the research bodies and the suppliers to the industry has resulted in processes and products which are now sold successfully all over the world. Knowledge will continue to be one of the Swedish forest industry's main competitive tools in the future.

Keeps the country moving

The pulp, paper and saw mills in Sweden are spread throughout the country. Many of the mills are to be found in places where there are few other job opportunities. In these places the forest industry keeps the community alive. Many municipalities are completely dependent on the forest industry and the forestry sector.



Creates jobs. Almost 200,000 people are employed either directly or indirectly in the forest industry and the forestry sector. The forest also provides income for 350,000 private forest owners throughout the country.

Tax revenues from the forestry sector help to finance the cost of health, education and social services. Receipts from the forestry sector in the form of taxes and duties are expected to amount to 10 billion kronor in 1996.

An important partner for cooperation. The forest industry is a major customer and an important partner for the engineering and chemical industries in Sweden. Product development is often carried out in close collaboration with their customers in the forest industry. Scania, Volvo Lastvagnar, Asea Brown Boveri, Kvaerner, Sunds Defibrator, Valmet and Eka Chemicals, are examples of companies which have achieved export success partly based on products developed in collaboration with the Swedish forest industry.

High-tech sector. A modern paper machine contains as much computer power as a jumbo jet. The forest industry is an important customer for many Swedish IT companies.

Sweden's biggest transporter. Every third tonne of cargo loaded on a ship for export is from

the forest industry. On dry land too, the forest industry is the biggest transporter with 35 per cent of the flow of goods on the railways, excluding the 'malmbanan' built specifically for the transport of iron-ore, and 23 per cent of road transport. In 1996, the forest industry spent 12 billion kronor on transportation. Most of this went to Swedish transport companies.

Sweden's biggest road builder. More than half of the country's 450,000 kilometres of roads are forest roads. The network, which would stretch five times round the world, has been built by the forest owners. The construction and maintenance costs amount to about 900 million kronor per year.

A resource for the whole of Europe

The Swedish forest is a raw material resource which benefits the whole of Europe. Timber stocks are increasing and Swedish forest companies will remain important suppliers of wood, pulp and paper to Europe. The forest will also continue to be a place for recreation where people can get close to nature.



Flows and cycles. More than half of Europe's forests are to be found in the Nordic countries and the most densely-populated areas are to be found on the continent and in Great Britain. As the picture shows, the 'flows' of fibre in Europe are centred around these two poles.

Virgin fibre from the forest and recovered paper are equally important raw materials for Europe's paper industry. Paper fibres cannot be recycled indefinitely. A continuous input of virgin fibres is needed for the system to work. This input comes, to a large extent, from the export of Nordic virgin fibre-based pulp, paper and paperboard to the continent and Great Britain.

The recovery of paper as a raw material is increasing rapidly. It is advantageous to incinerate paper that cannot be recycled as a material, if the energy produced is harnessed. Paper is a bio-fuel which, unlike oil and coal, does not introduce new carbon dioxide into the atmosphere. The quantity of carbon dioxide which is released when the paper is incinerated is more than matched by the carbon dioxide taken up by the growing trees and returned to the ecocycle.

Self-sufficient. The forest industry has become more influential in Europe. When Sweden, Finland and Austria joined the EU, the area of forest in the EU doubled. From having been a deficit area, the EU has now achieved a higher degree of self-sufficiency in forest industry products.

The forestry sector and the process industries in the EU-countries employ a lot of people. A large proportion of these jobs are to be found in small and medium-sized companies spread throughout the whole of the Union.

A growth industry. Paper production in Europe has doubled in the last twenty years. Growth in the pulp, paper and paper products industries since the start of the eighties has been higher than the average for European industry as a whole. There are some 180 Swedish-owned forest industry installations on the continent and in Great Britain. They are mainly for the production

of corrugated paperboard and sacks, and include about 40 Swedish-owned mills which produce 7 million tonnes of paper. In Sweden, over 9 million tonnes are produced at 50 mills.

A forest for people, animals and plants

The forest is a place for people, animals and plants to co-exist. Under the new forestry policies, the preservation of the nature values is as important as the production of wood. The goal is to ensure that the species which occur naturally in the forest landscape shall remain. The natural forest is the model on which the new Swedish forestry is based.



Towards sustainable forestry. By international standards, Swedish forestry is at the forefront when it comes to research, development and application of new forestry methods that are adapted to the natural environment. The combination of daily nature conservation, adapted forest management and ecological landscape planning is producing results.

Large areas taken out of forestry. Our experience shows that it is possible to combine rational forestry with good nature conservation. However, certain endangered species demand that larger areas of associated land are completely set aside from forestry. Some 3 per cent of the Swedish forest land is being set aside voluntarily. In addition, some 4 per cent is being set aside as part of nature preservation measures at felling time. The cost of nature consideration measures to the forest companies amounts to about 500 million kronor per year.

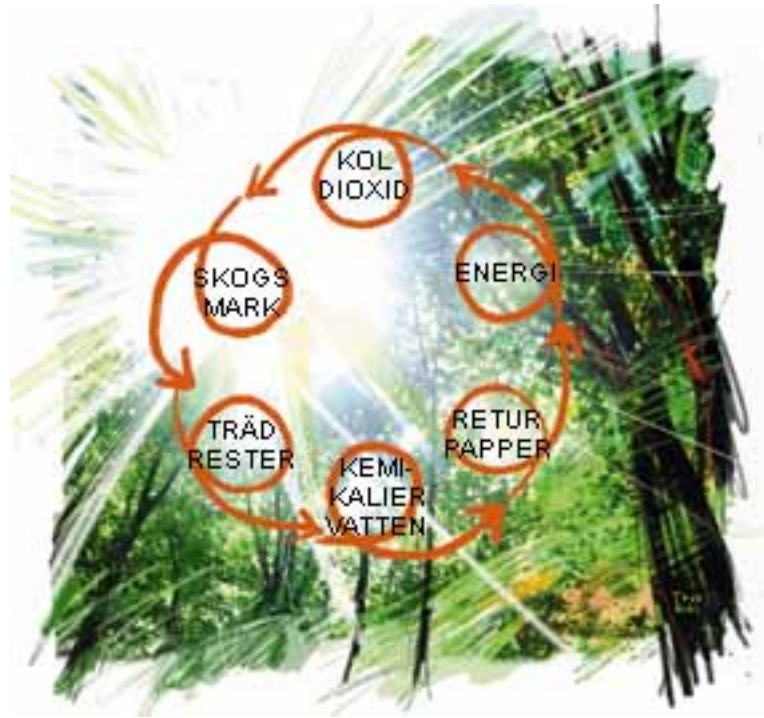
On top of this, the state protects the forest through its national parks and nature reserves. This means that, at today's level of voluntary set-asides, a tenth of Sweden's forest land is being taken out of forestry for nature conservation reasons.

Nature values recreated. The new forestry policy tries not only to preserve the nature values, but also to recreate the environments which were lost earlier through forestry and other human activities. Important goals include increasing the share of deciduous trees and old trees. More dead trees are now left untouched to provide habitats for many endangered species. This work has to be seen in a time perspective of several hundreds of years.

Environmental certification in forestry. The Swedish forest industry together with environmental organisations and other parties participate in work to create a system of environmental certification in forestry. The purpose is to safeguard bio-diversity and to encourage sustainable forestry.

Am ecocycle industry

Paper is a natural material. It comes from forest which grows with the sun as its only source of power, with photosynthesis as the driving force. The raw material is renewable and the products can be recovered. If the forest and the mills are managed properly, paper will always be an environmentally-adapted material, whether it is made from virgin fibre from the forest or from recovered paper. About three-quarters of the newspapers and corrugated paper in Sweden are recovered. Paper recovery is, however, only one of many eco-cycles around which the forest industry is built.(see picture)



Production cycles. Sustainable forestry is a form of recycling. The productive potential of forest land can be used again and again.

Recovery of by-products and forest residues. As much as 95 per cent of a tree trunk is utilised by the sawmills, the pulp mills and the board makers. Bark and other by-products are used for various other purposes. Even those parts of the tree which cannot be used as an industrial raw material, mainly tops and branches, can to a certain extent be used as fuel.

Recovery of chemicals and process water. Almost 100 per cent of all cooking chemicals are recovered in Swedish pulp mills. Modern chemical pulp mills are self-sufficient in thermal energy through the incineration of spent liquors, bark, etc. The increasingly 'closed' processes mean that process water is recirculated to a higher and higher extent.

Recycling of recovered paper. In Sweden, the paper industry, the collection companies, the municipalities, households and the retailing industry work together for paper recovery. The total recovery rate is about 55 per cent.

Recovery of energy. A great deal of the paper which cannot be recycled as a material is used in energy production. The heat is used to warm apartments through district heating networks. Thus, almost three-quarters of all Swedish paper is recovered, either as a raw material or as an energy source.

Carbon dioxide cycles. Carbon dioxide is released when the used products degrade naturally or are incinerated. The forest industry's transport activities and production processes also give rise to releases of carbon dioxide. The growing forest, however, takes up even more quantities

of carbon dioxide which are reused in photosynthesis.

An electricity-intensive industry

Energy is the most important input factor for the pulp and paper industry apart from the raw material wood. The mills themselves produce most of their own heating requirements from bark, other bio-fuels and spent liquors.

Large quantities of electricity are needed to run the mills. Secure supplies of electricity at competitive prices are a prerequisite for the future progress of the industry. For this reason, the industry is opposed to the premature phasing out of nuclear power, which would lead to higher electricity prices. The phasing out of nuclear power would, in addition, mean higher emissions of acidic substances, which would have a negative impact on the forest assets.



Needs more electricity. The forest industry is Sweden's biggest consumer of electricity. Consumption in 1996 was in the region of 20 TWh. It is expected that increased production, in spite of the more efficient use of electricity, will lead to a rise in demand, to a level of 25 TWh in the year 2020.

A major cost. The annual cost of buying electricity for the forest industry today amounts to 3.5 billion Swedish kronor. A rise in the cost of electricity, in the short run, would threaten the profitability and reduce willingness to invest in Sweden. In the longer term, it would probably result in structural changes.

Bio-fuel techniques with potential. The forest industry is the largest user and producer of bio-fuels. Companies are also pushing ahead with the development of new techniques to utilise bio-fuel from the forest. However, the ecological and financial considerations impose their own limitations. The removal of waste residues such as branches and tree-tops cannot be carried to extremes because of the risks of impoverishing the forest land and endangering bio-diversity. Over and above existing levels, there are potential savings available from logging residues, branches and tree-tops equivalent to 5–10 TWh of fuel.

Fuel and electricity are not the same thing. In order to generate 1 TWh of electricity, about 3 TWh of fuel are required. Logging residues could, at most, provide electricity equivalent to a smaller nuclear reactor. Thus, in the debate on energy, too much faith has been put in the ability of the bio-fuels to replace nuclear power.

The Swedish strategy

Environmental work began more than 25 years ago in the forest industry. The strategy chosen was to be 'clean at source', i.e. to try to minimise the presence of pollutants by changes in the processes. Only when these measures are no longer sufficient other techniques to reduce emissions to air and water have been applied. This approach has pioneered development of new techniques.



The curves point steeply downwards. The work has been successful. The emission curves all point steeply downwards. Most emissions to air and water have been reduced by 90–95 per cent. Since 1994, the Swedish pulp industry has completely ceased using chlorine gas for bleaching.

The costs have been high. In 25 years, the pulp and paper industry has invested about 25 billion kronor, at current values, in environmental measures.

Constant improvements. The attitude of the forest industry is that the remaining environmental problems shall be solved. The processes and the purification techniques are being successively improved, and new energy- and material-efficient products are being developed.

Environmental policy for transport. Transport has come increasingly into focus from an environmental point of view. The forest industry has this year drawn up a policy with the intention of reducing the environmental impact of its transport activities.

Environmental management and eco-auditing. Increasingly, companies are introducing environmental management systems, such as EMAS and ISO 14000, to guarantee high quality in environmental work. Environmental audits and 'green' balance sheets are becoming more common and comprehensive.

A significant component of daily life. The product from the forest are essential to many

aspects of our daily lives. House-building, furniture manufacture, books, printed media, education, protective packaging, hygiene and medical uses are just some of the more obvious applications where forest products play an important role. With enlightened policies towards nature conservation, sustainable forestry, paper recovery and environmental protection, the forest industries will continue to have an important contribution to make towards our standard of living as we approach the 21st century.

THE SWEDISH FOREST INDUSTRIES ASSOCIATION 1997

The Swedish Forest Industries Association is the trade organisation for producers of pulp, paper and sawn timber. Its task is to promote the interests of the member companies, both in Sweden and internationally.



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