INTERNATIONAL LABOUR ORGANIZATION

Globalization and sustainability: The forestry and wood industries on the move

Report for discussion at the
Tripartite Meeting on the Social and Labour Dimensions
of the Forestry and Wood Industries on the Move

Geneva, 2001

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Introduction

Origin, purpose and composition of the Meeting

The forest industries have been subject to intense economic and environmental pressures over the last decade. This has affected all subsectors: forestry, the wood industries, pulp and paper, as well as furniture. The sector has reacted with a number of moves in order to improve competitiveness and profitability and to secure its long-term future. These moves have far-reaching social and labour implications. Some have negative impacts, others open up new opportunities.

In order to enable a global social dialogue to take place among representatives of governments, employers and workers from countries with significant forest industries, the Governing Body of the ILO decided at its 273rd Session (November 1998) to include a "Tripartite Meeting on the Social and Labour Dimensions of the Forestry and Wood Industries on the Move" in the programme of sectoral meetings. At its 274th Session, the Governing Body decided that the purpose of the Meeting should be to exchange views on trends in structural adjustment, globalization and relocation in the forestry and wood industries, as well as on environmental aspects, and to discuss their social and labour consequences on the basis of a report prepared by the International Labour Office. The Meeting is to adopt conclusions that include proposals for action by governments, by employers and workers and their organizations at the national level and by the ILO, as well as a report on its discussions. The Meeting may also adopt resolutions.

The Governing Body decided that the Meeting should have 60 participants, with 20 each representing governments, employers' and workers' organizations. The governments of the following countries should be invited to participate: Austria, Brazil, Canada, Chile, China, Côte d'Ivoire, Democratic Republic of the Congo, Estonia, Finland, Ghana, Indonesia, Malaysia, New Zealand, Papua New Guinea, Philippines, Romania, Russian Federation, South Africa, United Kingdom and the United States. A number of countries were included in a reserve list from which further invitees would be drawn in the event that a government on the first list did not accept the invitation. Employer and Worker participants in the Meeting would be appointed on the basis of nominations made by the respective groups of the Governing Body. They will not necessarily come from the above list of countries.

The Meeting is part of the ILO's Sectoral Activities Programme, the purpose of which is to facilitate the exchange of information among constituents on labour and social developments related to particular economic sectors, complemented by practically oriented research on topical sectoral issues. This objective has traditionally been pursued by the holding of international tripartite sectoral meetings for the exchange of views and experience with a view to: fostering a broader understanding of sector-specific issues and problems; promoting an international tripartite consensus on sectoral concerns and providing guidance for national and international policies and measures to deal with the related issues and problems; promoting the harmonization of all ILO activities of a sectoral character

and acting as the focal point between the Office and its constituents; and providing technical advice, practical assistance and concrete support to ILO constituents in order to facilitate the application of international labour standards.

Aim, focus and organization of the report

This report explores the relationship between globalization, decent work and sustainable development in the forestry and wood industries. The sectors considered in some detail are forestry, the mechanical wood industries and furniture. Peripheral attention is given to the pulp and paper industry because this sector is often a major owner of forests and/or integrated with other subsectors. Given the complexity of the subject, the report concentrates on the industry's formal sector and deals only in passing with the very large informal and subsistence sectors.

The first four chapters examine whether the industry is actually "on the move", as has often been suggested, how and why the moves are taking place, as well as the direction they are taking and where they are likely to lead. Chapter 5 discusses the implications from a "decent work" perspective. It considers repercussions for the volume and the quality of employment, for business and human resources development, for the protection of rights at work and for social dialogue. Chapter 6 looks at possible ways forward. It presents the numerous initiatives by governments, employers and workers around the world which have attempted to reconcile globalization with the twin goals of decent work and sustainable development. Particular attention is paid to efforts that appear to be successfully harnessing the forces of globalization to advance those two goals and which can be seen as an emerging body of best practices on which to build.

This report has been written by Peter Poschen and Mattias Lövgren, forestry and wood industry specialists, with editorial support from Liz Arnfield, all of the Sectoral Activities Department, ILO. It is published under the authority of the International Labour Office.

Information in the report was gathered from a wide range of sources, including visits to government agencies, employers' and industry organizations, trade unions and workplaces in Europe, the Americas and Asia. In addition to extensive searches of literature and statistical databases, national case studies were commissioned in Côte d'Ivoire, Democratic Republic of the Congo, South Africa, Malaysia, Indonesia, Japan and the Russian Federation, as well as a number of Central and Eastern European countries including Estonia, Poland, Czech Republic, Hungary and Romania. Elements of the country studies have been incorporated into the report. Selected studies will be published as Sectoral Working Papers. When published, they can be obtained from the Sectoral Activities Department or from the ILO's web site http://www.ilo.org/public/english/dialogue/sector/.

This report has been prepared by the International Labour Office as a basis for discussions at the Tripartite Meeting. It is hoped that it will also be of value beyond that Meeting to all those concerned with the forest industries and the ways in which economic, environmental and social goals can be balanced to serve the needs of present and future generations.

1. On the move? Evidence that globalization is happening in the forest industries

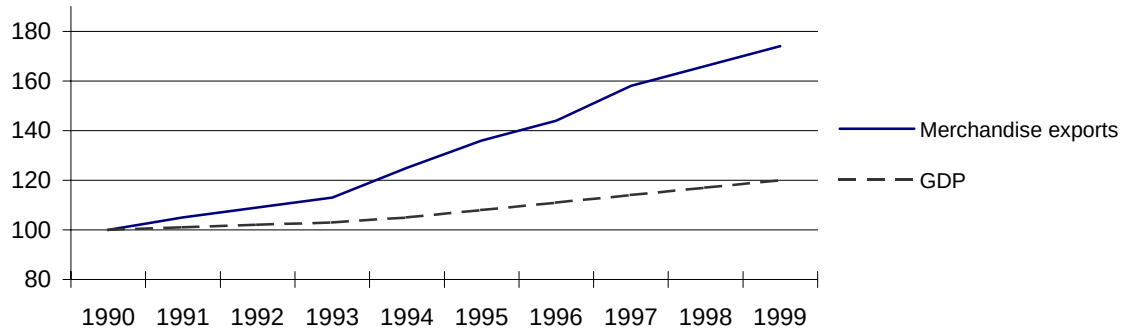
Are the forestry and wood industries on the move? According to some, describing what has been happening in the sector as "a move" would be an understatement. In August 1996, *The Economist* carried an article entitled "The forestry industry uprooted". The article argued that the industry was abandoning its traditional production locations and setting up new facilities based on fast-growing plantation forests in the southern hemisphere. It predicted that Latin America would overtake North America as the major exporter of forest products to the Pacific Rim by 2010. That now looks unlikely: North America still exports ten times as much to Asia as Latin America.

So was *The Economist* wrong? Probably not, as this report will argue, but it overestimated the pace and was too one-dimensional with regard to the nature of the move. The first dimension of the move is that the forestry and wood industries are now firmly in the grip of globalization, when measured in terms of the trade to production ratio, the formation of a true world market for at least some forest products and the role of foreign capital.

1.1. Trade versus production

As can be observed in figures1.1 to 1.4, trade in forest products has followed the general trend by far outgrowing production. Over the last 30 years, there has been a fourfold increase in trade. The US$150-200 billion traded internationally at the end of the 1990s represented 30 per cent of world production (Brooks, 1999). The disproportionate rise of trade is true for all products except roundwood, though to varying degrees. Trade has risen 40 per cent faster than production for solid wood products, as well as for pulp and paper. Higher value added products, like wood-based panels, paper and paperboard, as well as furniture parts, have experienced the fastest growth in trade (Bourke and Leitch, 1998).

Figure 1.1. World GDP versus world trade (1990 = 100)



Source: WTO, quoted in *The Economist.*

Figure 1.2. World production versus trade (solid wood products) (1990 = 100)

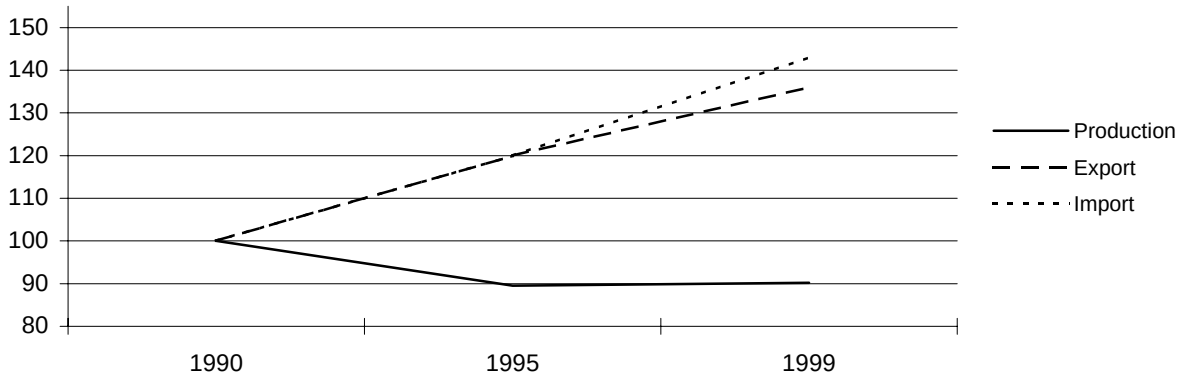


Figure 1.3. World production versus trade (pulp and paper) (1990 = 100)

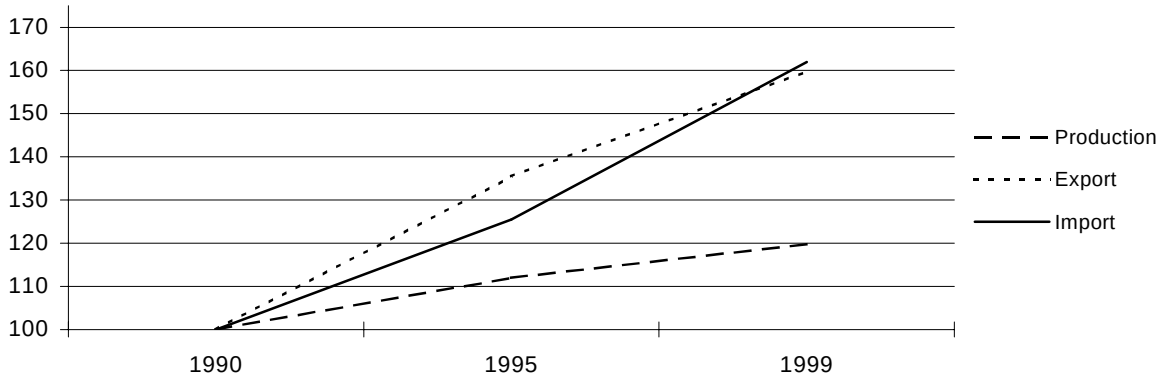
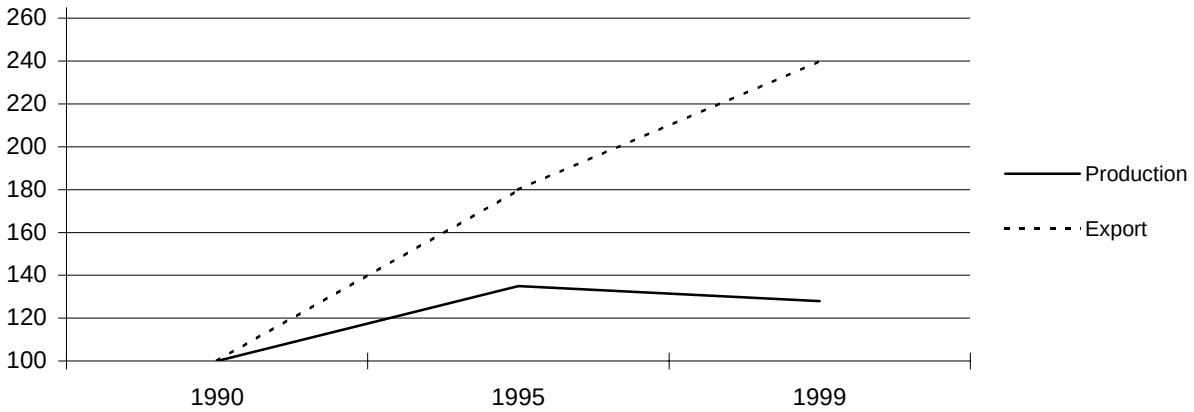


Figure 1.4. Trade in furniture (selected countries) (1990 = 100)



Figures 1.2, 1.3, 1.4 based on UNIDO data.

The increase has been even more dramatic in the furniture segment, where trade has doubled over the last ten years, increasing far faster than total trade. Between 1961 and 1994, only computers registered faster growth of imports into high-income countries than furniture. Trade in furniture ranked 19th out of 261 product categories, ahead of apparel and shoes, for example (Kaplinsky and Readman, 2000).

More countries are now more active in the forest products trade than ever before but, as table 1.1 shows, trade remains rather concentrated among a relatively small group of countries. Many of these are both major exporters and importers. The share of tropical countries has been rising slowly, mostly because of exports of wood-based panels.

Table 1.1. Major importers and exporters of forest products, 1996

Importers	('000 US$)	Exporters	('000 US$)
United States	22 558 540	Canada	25 333 160
Japan	18 890 400	United States	16 939 900
Germany	11 926 820	Sweden	10 996 200
United Kingdom	8 476 689	Finland	10 301 020
Italy	6 148 593	Germany	9 438 751
France	5 356 351	Indonesia	5 206 522
Netherlands	4 489 773	France	4 193 914
Korea, Republic of	4 425 527	Malaysia	4 161 279
China	3 858 254	Austria	4 149 678
Spain	3 552 249	Brazil	3 233 476
Belgium-Luxembourg	3 544 574	Russian Federation	2 995 568
Hong Kong, China	3 488 083	Italy	2 486 782
Taiwan, China	3 040 661	Netherlands	2 406 430
Canada	2 622 203	Belgium-Luxembourg	2 180 694
Switzerland	2 501 957	Norway	2 059 960
World	138 652 200	World	134 656 400

Source: FAO, quoted in Bourke and Leitch, 1998.

At closer inspection, it becomes clear that the apparent world trade is to a large extent the result of vibrant intra-regional trade. Flows between Canada and the United States, between northern and central Europe and within South-East Asia still account for the bulk of world trade. There are, however, indications that the situation is changing, and indeed at an unprecedented pace, as the following examples show.

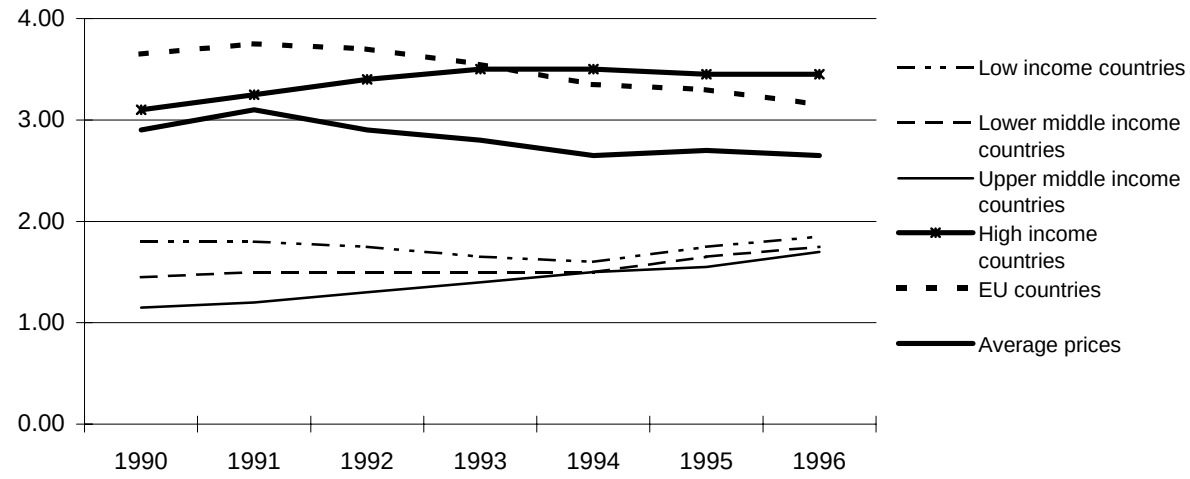
Indonesia's pulp production capacity expanded from 0.6 to 4.9 million tons/year and its paper production capacity from 1.2 to 8.3 million tons/year over the period 1988-99. Exports of pulp rose by a factor of ten, and those of paper doubled over the last decade. With a value of about US$2.65 billion, pulp and paper products represented over half of Indonesia's forest-related exports in 1999 (Barr, 2000).

Furniture production and exports have also exploded in a number of countries over the last ten years. While furniture production quadrupled in Poland between 1990 and 1999, exports have increased tenfold to more than US$1.9 billion, and account for 7 per cent of all Polish exports. In Brazil, where furniture exports grew by over 37 per cent annually during the 1990s, the Ministry of Development has set a target of US$3.39 billion by 2004, up 71 per cent from 2000 (O Estado de São Paulo, 7 February 2001). China's furniture exports more than doubled between 1997 and 1999 to reach US$2.7 billion. Malaysian furniture exports grew more than fortyfold from just 120 million ringgit in 1988 to 5.33 billion ringgit in 1999 (*Holz-Zentralblatt*, 22 January 2001). One of the major destinations for exports from Asia has been the United States, where imports have been rising fast and have captured one-third of the market, while domestic production is stagnating. As a result, the trade deficit in furniture has widened from US$2.4 billion in 1991 to US$9.5 billion in 1999 (Schuler and Taylor, 2001).

1.2. "World prices"

Another measure of the integration into a world market is the emergence of a "world price" This has been the case for some time already for commodities like different types of roundwood and the various grades of pulp. The shockwaves sent through the domestic hardwood sawmilling industry by the presence of Chinese buyers at auctions of beech sawlogs in Germany may have been exaggerated, given the relatively limited volumes involved, but it sends out a genuine message that a sawmill at the other end of the world may be a competitor. Some analysts have argued that a trend towards a world price can even be observed in the furniture market. Analysing trade data, Kaplinsky and Readman (2000) find a downward convergence of prices globally, as illustrated in figure 1.5. Even though the remaining spread is still significant, the trend is a clear sign of intense global competition.

Figure 1.5. Unit price trends (wooden furniture product imports) ('000 euros per tonne)

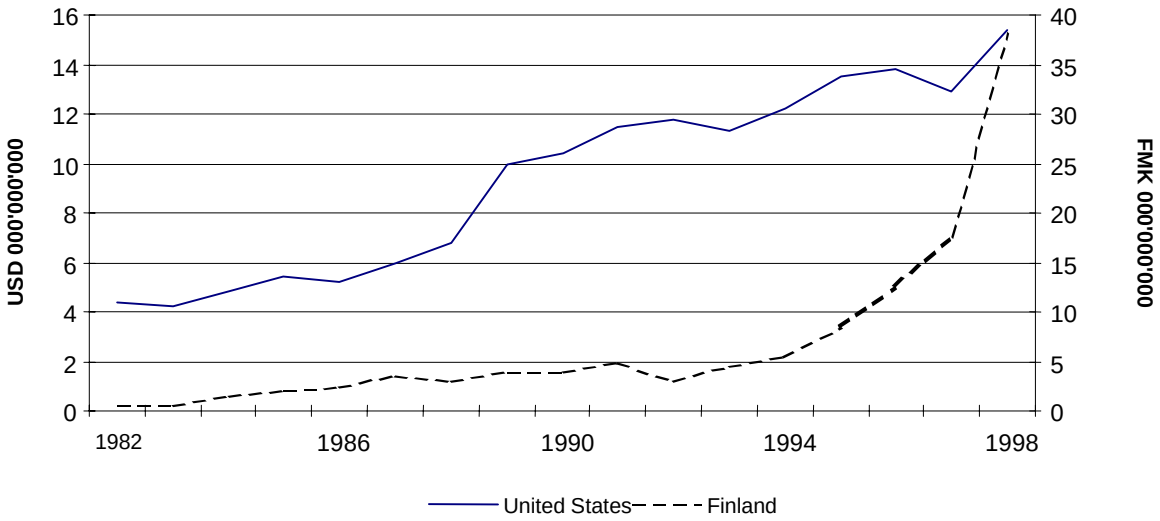


Source: Kaplinsky, 2000.

1.3. Foreign direct investment

A third indicator of globalization is the role of foreign capital and transnational companies. Again, the forest industries have been no exception to the global rule. The boom in the Indonesian pulp and paper industry has been largely funded through over US$12 billion of foreign capital in the form of shares, bonds and loans. A more common source of capital is foreign direct investment (FDI), which recorded its tenth consecutive year of growth in 2000 and was expected to pass the US$1,000 billion mark (UNCTAD, 2000). Data on FDI in the forestry sector are difficult to come by. The conclusion from what information is available is that even though the forest industries may not have been the forerunners of this global trend, they, too, have seen a steep increase in FDI (Uusivuori and Laaksonen-Craig, 2000). Figure 1.6 illustrates this point for outward forest industry FDI from the United States and Finland. FDI originating from United States forestry firms quadrupled between 1982 and 1998 and that from Finnish ones soared tenfold in the decade 1988-98.

Figure 1.6. FDI abroad from the United States and Finland, 1982-98



Source: Uusivuori and Laaksonen-Craig, 2000.

The investment required to meet the increase in demand for forest products projected between 1995 and 2010 has been estimated at US$200 billion (*The Economist*, August 1996). The lion's share of that sum originates from multinational companies, both in their countries of origin and abroad. Given the scarcity of data on forest industry FDI in general, the share going to developing countries is even harder to assess and locate. However, it is very likely that FDI has replaced overseas development assistance (ODA) as the main source of external funding for forestry and forest industries development. Again, most of this flow is generated through multinational companies (Chandrasekaran, 2000). Foreign firms have clearly increased their presence in many developing countries, be it as holders of logging permits and concessions or as owners of industry (Bourke and Leitch, 1998).

The forest industry may not have been "uprooted" as *The Economist* suggested, but it is clearly sowing seeds for its future growth further afield, or as an

industry magazine put it: “Globalization is sweeping the forest industry like a tidal wave. The companies are getting bigger and stronger and national boundaries are being steadily eroded” (*Skogsindustrierna*, Special EU edition, 2001).

2. How is it moving? Mechanisms fostering closer linkages between countries and firms

2.1. Closer international integration

The traditional channel for exports has been open trade. That still plays a major role, but it appears to be increasingly replaced by modes involving closer ties between producers and foreign customers: subcontracting and FDI. Subcontracting, in particular through original equipment manufacturers (OEM), is spreading. It has been used for decades by IKEA, one of the world's largest furniture retailers which sources about US$7 billion worth of products for its more than 160 stores in 30 countries from 2,000 suppliers in 56 countries. Subcontracting is also behind the surge of furniture exports from Brazil to the United States. Eighty per cent of the production of Malaysia's two biggest furniture exporters is OEM. This arrangement is behind 75 per cent of Malaysia's furniture exports (*Asiantimber*, 2000).

FDI is much more visible because of its often large scale. Scandinavian pulp and paper producers have been in the forefront. Acquisitions by Nordic forest products groups until the summer of 2000 stood at US$8 billion. Norske Skog now owns 20 mills on five continents. In 1960 SCA employed 14,900 persons exclusively in Sweden. By 1992, two-thirds of its 29,600 strong workforce were employed in 27 countries. Today the company employs 34,000 workers in 40 countries. Soedra has also ventured abroad recently with acquisitions in Norway and a US$900 million joint venture investment planned in Latvia. In France, Germany and the United Kingdom two-thirds of paper production capacity is foreign owned (*Skogsindustrierna*, special EU edition, 2001).

The picture is similar on other continents. In Malaysia, foreign investment represents 38 per cent of total forest industries investment, sourced mostly from Japan, United States, Singapore, and Taiwan (China). Foreign investment in Malaysia is mostly in plywood and veneer, 90 per cent of which is exported, and furniture (Ho et al., 2001). An example of FDI in Indonesia is the US$100 million plantation project by Stora-Enso. Stora has also entered into a joint venture in Brazil with plans to invest US$1.5 billion in a new pulp mill (*Financial Times*, 8 December 1997). Argentina reports current investment projects worth US$2 billion to be completed within the next ten years with major participation by multinational companies from the United Kingdom, United States, New Zealand, Germany and Chile. The three largest investors in Uruguay's plantations' boom are Weyerhaeuser (United States), Shell-UPM/Kymmene (United Kingdom/Finland) and a Spanish company.

2.2. Mergers and acquisitions

Mergers and acquisitions in the forest industries have been on the rise for at least two decades (see ILO, 1992, for developments in the 1980s). In the 1990s

they have accelerated and moved into a new order of magnitude, as can be observed in box 2.1, which lists only the most important mergers and acquisitions between 1995 and 2000.

Box 2.1
Major mergers and acquisitions in the forest products industry, 1995-2000

1995	Kimberley-Clark and Scott Paper (both United States) James River and Fort Howard (both United States)
1996	Repola and Kymmene (both Finland) Enso-Gutzeit and Veitsiluoto (both Finland) Mondi (South Africa) stake in Aracruz (Brazil) New Oji and Honshu (both Japan)
1997	Abitibi-Price (Canada) and Stone Consolidated (United States) SCA (Sweden) and PWA (Germany) UPM-Kymmene (Finland) and Blandin UPM-Kymmene (Finland) stake in APRIL (Singapore/Indonesia) SAPPI (South Africa) and KNP Leykam (Netherlands/Austria) Mondi (South Africa) and Swiecie (Poland) Stora (Sweden) joint venture with Odebrecht (Brazil) Metsä-Serla (Finland) and UK Paper (United Kingdom)
1998	Stora (Sweden) and Enso (Finland) Jefferson Smurfit (Ireland) and Stone Container (United States) Fletcher Challenge (Canada) and Trust International Paper (Philippines) Oji (Japan)/Enso (Finland) take stake in Advance Agro (Thailand) Stora (Sweden) takes stake in Suzhow Papyrus (China) Bowater (United States) and Halla (Republic of Korea)
1999	International Paper and Union Camp (both United States) Georgia Pacific and Unisource (both United States) Weyerhaeuser (United States) and Macmillan-Bloedel (Canada) Canfor and Northwood (both Canada) Metsa-Särla (Finland) and Modo Paper (Sweden) Louisiana Pacific and Forex (both United States) Madison Dearborn and Teneco (both United States) Atibiti Cons. (Canada) and Donohue (United States)
2000	Stora Enso (Sweden/Finland) and Consolidated Papers (United States) International Paper/Champion and Shorewood Packaging (both United States) Norske Skog (Norway) and paper business Fletcher Challenge (New Zealand) Nippon and Daishowa (both Japan) UPM-Kymmene (Finland) and Repap (Canada)

Sources: *Financial Times*, 8 December 1997, 7 December 1998 and 30 August 2000; PriceWaterhouseCoopers, 2000.

Most of these mergers and acquisitions have involved members of the "million tonners club", i.e. firms with an annual output of a million tons or more. Consolidation is clearly accelerating, even if the industry remains fragmented overall, with the five largest corporations controlling under 20 per cent of world output (Niemelä, in Skogsindustrierna, 2001). In spite of being an industry with comparatively modest levels of concentration, two forestry companies rank among the 100 largest transnational companies by foreign assets: Stora Enso based in Finland (ranked 63) and SCA of Sweden (ranked 98). The biggest forest products firm in the world, International Paper (United States), just missed a listing among the top 100 (UN/UNCTAD, 2000).

While the forestry sector has clearly undergone a major acceleration over the last decade, the activities of large multinational corporations within the sector, and

predominantly in the pulp and paper industry, are nothing new. On the other hand, two other phenomena do add a new dimension to globalization in the forestry sector: small businesses going abroad and new countries as sources of FDI.

2.3. New players – Transnational companies and developing countries

Particularly in the solid wood products and furniture industries, transnational companies (TNCs) are emerging in growing numbers. Compared to the multinational corporations (MNCs) involved in the mega-mergers and acquisitions, these are small, often family-owned businesses with turnover measured in millions rather than billions of dollars. They use relatively modest investments to acquire subsidiaries in a limited number of foreign countries, usually within the same region. In industries already dominated by larger firms, joint ventures increasingly extend to other continents. In the mid-1990s more than 160 joint ventures existed between office furniture makers in China and firms based in the European Union (EU, 1997). This trend adds a significant new dimension to the overall globalization phenomenon because it extends it beyond pulp and paper to all categories of products and into the more labour-intensive subsectors and classes of firms.

A second departure from established patterns concerns the geographic origin of FDI. In addition to North America, Western Europe and Japan, which continue to dominate forest industry FDI, there is a growing number of new sources: Chilean firms, for example, are engaged with substantial resources in Argentina, Brazil, Uruguay, Venezuela and Mexico. The Chilean company Arauco alone intends to invest US$1.5 billion in plantations and processing facilities in Argentina over the next ten years (*Holz-Zentralblatt*, 24 November 2000). Malaysian and Korean logging companies are active in Oceania, Africa and Latin America. Hong Kong (China) and Taiwan (China), are major investors in Indonesia, Malaysia and mainland China. South Africa's pulp and paper firms – themselves largely foreign owned – have ventured into the United States and Europe. SAPPI featured as the fifth largest transnational company from a developing country in the 1998 *World Investment Report* (UNCTAD, 1998).

A phenomenon still too rare to call a trend, but which clearly could accelerate foreign capital flows, is investment in carbon mitigation. In the absence of clarity on the Kyoto Protocol, only a limited number of projects have gone ahead, but it is obvious that plantations in the southern hemisphere are an attractive proposition. If included under the clean development mechanism, plantation development and, to a lesser extent, management of natural forest could lead to substantial new investment originating from outside the forestry sector such as power companies and car manufacturers. The general direction of flow would be north to south.

3. Why is it moving? The forces of change

Globalization is a pervasive phenomenon that has engulfed just about every sector of primary and manufacturing industry and many services. A number of generic causes are found across a wide range of sectors. As generic causes Dicken (1992) identifies opportunities to enter new markets or increase market penetration and/or to access inputs at lower cost as the primary causes for globalization. Enabling technologies, such as transport, communications and organization, are a necessary, but in themselves insufficient, prerequisite for firms to seize these opportunities. To these should be added a favourable regulatory framework. All of these also apply to the forestry and wood industries, but there tends to be a rather unique dimension to them in this sector.

3.1. A favourable environment for global business

Lowering trade barriers

As in other sectors, substantial tariff reductions have been the key to the expansion of international trade in forest products. Tariffs levied by industrialized countries have been falling in the wake of the Uruguay Round and are now generally below 5 per cent for forest products. The United States, Canada, Japan and the European Union agreed to a "zero-for-zero" reciprocal elimination of tariffs for furniture by 1999 and for paper and paper products by 2004, and to reductions for other products (Brooks, 1999).

For the time being, exceptions are some panels, in particular plywood, builders' woodwork items, furniture and some paper products for which tariffs are still in the 10-15 per cent range. The tariffs on plywood and furniture are of particular relevance to tropical exporter countries. Most developing countries have maintained far higher tariffs in the 10-60 per cent range. In all countries there continue to be varying degrees of tariff escalation for higher value added products (Bourke and Leitch, 1998). The trend is, however, towards a further fall in tariffs. Forest products are included in a proposed "accelerated tariff liberalization" among industrialized countries, which would speed up the elimination of tariffs on paper and a number of wood products. Major importing developing countries such as China and India are also in the process of lowering tariffs (FAO, 1999).

In addition to the removal or lowering of trade barriers under the World Trade Agreement, forest products have benefited from the growing number of regional trading blocks. APEC, ASEAN, ANZCERTA, CARICOM, EU, MERCOSUR, NAFTA and SPARTECA all have provisions enhancing international trade in forest products. Non-tariff measures are more difficult to evaluate and have acquired greater significance relative to tariffs, but are not considered major barriers, unless a combination of tariffs, non-tariff measures and trade impediments such as certification apply simultaneously (Bourke and Leitch, 1998).

Favourable regulations and enabling technologies

Governments have not only been paving the way for increased international trade, but also for FDI. The regulatory framework has become more favourable in almost all countries. The changes range from lifting restrictions on foreign ownership or repatriation of revenue to entitlement to subsidies (United Nations, 2000). This favourable attitude towards FDI has also spurred significant investment in the forest industries, for example in Australia, New Zealand, Argentina, Brazil, Chile, Uruguay, Malaysia and Indonesia. The most recent addition to the list is China, which has opened access to state-owned forests for private firms and individuals (Chinaonline, 26 February 2001).

Enabling technologies have also played an important role in globalization of the forest industries. Information and communications technologies have enormously improved the availability of information about markets and facilitated communication with distant and dispersed suppliers. The impact of these technologies is probably only just beginning to show. Perhaps the most important technological development affecting trade over the last three decades has been the relative fall in transport costs. This has partly been the result of improved infrastructure such as roads, railway terminals and harbours, but a windfall from the overall expansion of trade has also played a major role. The large volumes of manufacturing exports from South-East Asia to Europe and North America have brought down freight costs, with underutilized shipping capacity on return trips. This has made long-distance transport of bulky, relatively low-value forest products a viable proposition.

3.2. Markets

As has been shown earlier, globalization in the forest industries through mergers and acquisitions has been focusing mainly on the traditional markets in North America and Europe and, to a lesser extent, Japan. An example is the move of Scandinavian pulp and paper firms starting in the 1960s, when they followed in the tracks of their exports into Western Europe. These were relocations away from raw material sources to markets, thereby shifting the centre of gravity of the firms to the South. They were mostly a matter of proximity and access to markets, rather than being motivated by the search for lower costs for raw materials or labour (Lindgren and Layton, 1994). The motivation changed in the late 1980s, when a foothold within the European Union and the availability of cheap recycled fibre as a raw material became key motivators (ILO, 1992).

Future demand for forest products

Several outlook studies agree that demand for forest products is set to continue growing over the next decade. Overall growth is, however, expected to be considerably slower than in the past. Forest products will be affected by this slowdown to varying degrees, as illustrated in table 3.1. Paper and paperboard and industrial roundwood will maintain relatively high growth rates, but panels will slow down considerably, while sawnwood is resuming modest growth after production actually declined in the 1990s.

Table 3.1. Actual and projected world consumption of wood, recovered paper and forest products, 1970-2010

Item	Actual [a]				Projected [b]		Annual growth rate (%)		
	1970	1980	1990	1996	2000	2010	1970-90	1990-2010	1996-2010
Industrial roundwood (million cubic metres)	1 277	1 391	1 713	1 490	1 667	1 872	1.5	0.5	1.6
Recovered paper (million metric tons)	30	51	82	108	116	171	5.2	3.7	3.3
Sawnwood (million cubic metres)	413	423	550	430	442	501	1.4	–0.5	1.1
Wood-based panels (million cubic metres)	69	88	126	149	143	180	3.1	1.8	1.4
Paper and paperboard (million metric tons)	128	156	240	284	313	394	3.2	2.5	2.4

[a] Data reported by the Forestry Department, FAO; data available at http:\\apps.fao.org. [b] FAO, 1997 and 1999.
Source: Modified after Brooks, 1999.

Slower overall growth will be distributed rather unevenly across regions. As income and the number of consumers are the principal factors underlying demand projections, growth will be fastest in urban areas of developing countries, particularly in South-East Asia. In the industrialized countries, sluggish GDP growth coupled with price increases for forest products could actually lead to a reduction in consumption (Solberg et al., 1996).

The outlook for furniture shows a similar contrast. European markets are largely saturated and most spending is discretionary, with only one-third of demand considered to be "incompressible" (EU, 1997). Per capita consumption levels in countries outside Europe are typically far lower, suggesting that there is significant potential for growth (Haas, 2001). This has been the case for North America during the recent economic boom (Schuler and Taylor, 2001), but even more so for rapidly growing newly industrialized or developing countries such as China.

Survival of the cheapest? Market structure and cycles

Two factors related to forest products markets and also playing an increasingly important role in shaping trade flows and the structure of the sector are:

(i) the cyclical demand and price fluctuations; and

(ii) buyers' markets with a growing concentration of purchasing power on the side of customers for many forest products.

All segments of the forest products industry are basically "price takers" in what continues to be a relatively fragmented industry. As such, forest products are tied into the ups and downs of general economic cycles: solid wood products closely trace housing markets and construction activity; paper products follow general consumption levels, as does furniture. The pulp and paper industry is famous for aggravating the problems of cyclical demand by an investment cycle that typically makes capacity increases coincide with a slump in demand and prices (PriceWaterhouseCoopers, 2000).

The market position is further complicated by the fact that the purchasing power for forest products is increasingly concentrated with buyers who are often several times larger than their biggest supplier. This goes for publishing houses as major buyers of newsprint and magazine paper, for do-it-yourself (DIY) chains as customers for solid forest products and to some types of furniture, as well as for furniture retailers like IKEA or buyers' groups in several European countries and the United States. Bertelsmann, a major publisher, has a turnover of about US$15 billion, which is three times that of Norske Skog, one of the biggest newsprint manufacturers. OBI, a multinational, German-based DIY chain, reported an annual turnover of US$3.8 billion in 2000, more than ten times that of the biggest German sawmill. Twenty buying groups control half of the German furniture market, which is supplied by more than 3,000 domestic producers and hundreds of exporters (UEA, 2000). Concentration is still less pronounced in some markets, but it is growing and in more and more cases the purchasers of forest products are becoming global customers.

In markets with a pronounced cycle, and where buyers are in a stronger position, the financial situation of forest industry firms fluctuates as well. Assets tend to become cheap during downturns and it is cost effective to buy rather than to build additional capacity. Downturns become periods of accelerated consolidation in the industry through both intensification of mergers and acquisitions and the closure of financially weak firms and non-performing mills and factories. This pattern can be observed clearly in the pulp and paper industry, but is no less prevalent in other sectors like sawmilling or furniture making. The consolidation that took place in the United Kingdom furniture industry in the early 1980s or in Spain in the mid-1990s are examples.

A third factor which exercises a powerful but rather uncontrollable influence on trade flows, is exchange rate fluctuation. This can affect the fortunes of forest industry exporters at short notice, as in the case of the Polish furniture manufacturers, which were left struggling after the sharp devaluation of the euro, the currency of their main market. In West Africa, exports rebounded after the devaluation of the CFA franc (Gnabeli, 2001). Exchange rates are also a contributing factor in the rise of furniture imports into the United States, where a weaker currency is Canada's most important advantage over United States manufacturers (Schuler and Taylor, 2001). Where exchange rates remain unfavourable over extended periods of time, they can irreversibly impact activity. Japan experienced this effect in the mid-1980s, when the yen appreciated strongly and rising imports were accompanied by a decline in domestic production and a major expansion of investment in plantations overseas (Fujiwara et al., 2001). The Japanese furniture industries went into tailspin in the early 1990s, when the recession further complicated the economic situation. The combined effect has been a dramatic fall in production, disinvestment and rising imports from Asian neighbours (EU, 1997).

3.3. Low-cost inputs

Firms have also targeted Central and Eastern Europe, South-East Asia, and the southern cone of Latin America for expansion and rising investment. All these regions are considered emerging markets for forest products in the medium to long

term. At least in the short term, most of the investment has tapped sources of low-cost raw material and/or labour to create export-oriented capacity. It would thus appear to be a case of "participation in supply chains from cost-competitive regions" as a recent study by the European Commission put it (EU, 1999). According to a study into the motivation of German FDI, the balance of pull-and-push factors also varies with the size of the firm. While for large firms market access is the prime motive, medium-sized enterprises invest in Central and Eastern Europe primarily because of lower wage costs (*Süddeutsche Zeitung*, 25 November 1999). A similar rationale would hold for investments in pulp and paper production in the southern cone of Latin America. The production price for bleached pulp in Chile in 1999 was estimated at US$330/tonne, compared to US$420/tonne for northern producers (*Financial Times*, 8 December 1999). Similar cost advantages apply to Brazil. The study of FDI by the United States, Finnish and Swedish forest industries cited earlier suggests that the search for fibre and for low-cost wood and labour were the main motivators for investments abroad. All of the above is also consistent with the conclusion reached by Uusivuori and Laaksonen-Craig (2000) that FDI is a complement to exports rather than a substitute for them.

Future supply of raw material

For the last 20 years, demand for roundwood has been growing more slowly than the output of forest products. Remarkable increases in conversion efficiency and recovery of fibre have been achieved, mostly through the use of wood residues and fibre recycling. This trend is likely to continue, and the roundwood input-to-output ratio of 95 per cent in the United States, for example, may well exceed 100 per cent in the near future (Ince, 2000).

Natural forests under pressure

While all projections of consumption show that demand should be comfortably within available resources globally, the situation is rather less reassuring in some regions (FAO, 1999). In North America, the large resources of high-quality coniferous timber from old-growth forest that used to exist, particularly in the western half of the continent, have largely been used up or withdrawn from use over the last decade for conservation purposes. Conservation measures have thus accelerated an already existing trend: the balance of forest exploitation has been shifting markedly from west to east in Canada and from north-west to south-east in the United States. Surpluses exist mostly in hardwoods, particularly in the northern and southern United States. Secondary and planted forest will be vital for softwood supplies (Boulter and Darr, 1996).

Deforestation continues largely unabated, with 12-15 million ha lost annually, practically all of this in the tropics. A number of African producers of tropical timber including Ghana and Côte d'Ivoire are struggling to maintain harvesting levels from a much reduced estate. This is mostly the result of deliberate, large-scale conversion of natural tropical forests to agricultural crops, namely coffee and cocoa (Gnabeli, 2001). In countries like the Democratic Republic of the Congo, which have extensive forest areas, much of the timber is beyond economic reach and would remain so even if the security situation were to stabilize (Mobula Meta Lidoga, 2000). Few countries still have abundant natural forest resources such as

Gabon (François, 1999). The biggest forest industry on the continent by far, that of South Africa, relies entirely on plantation forests.

In Asia a number of countries have seen their inventories dwindle at alarming speed. The Philippines have been reduced to being a net importer of forest products from being the world's largest exporter of tropical timber in the 1960s. Malaysia had to reduce its timber production by almost half between 1990 and 1998, a reduction largely absorbed by a decline in roundwood exports from 20 to 5.6 million m^3, by the extensive use of rubberwood and by timber smuggled into the country from Indonesia, aggravating the impending crisis there (Ho et al., 2001). Indonesia is already faced with a huge shortfall of timber even for its domestic industry. Installed capacity is thought to be twice the sustainable volume of timber production: 47 million m^3 as against 23-31 million m^3. The imbalance is mostly accounted for by illegal cutting (Erwidodo et al., 2001).

Europe as a whole disposes of an annual increment well in excess of harvesting levels, but roundwood prices and fragmented ownership put significant volumes out of reach. Finland, for example, has an annual allowable cut of 73 million m^3, but harvested only 55 million m^3 in 1999, while importing almost 14 million m^3, mostly from the Russian Federation (Pajuoja, 2000).

Brazil is experiencing a trend that is likely to become a pattern worldwide. Its industrial supply has increasingly shifted away from natural forests towards plantation-grown wood which now provides almost two-thirds of industrial roundwood (FAO, 1999). Deforestation in Brazilian Amazonia continued at record levels during the 1990s (*Financial Times*, 2 November 1999), and there is concern that the present plantation estate of some 5 million ha may soon be too small to feed the growing industry (SBS, 1999).

More trouble ahead? Conflicting demands on forests

Although the industry is not going to be starved of fibre from a global perspective, the supply situation is unfavourable or even critical in a number of regions. Even where forest resources appear plentiful, the potential for conflict is rising as additional demands are made on products and services from forests and on the way benefits should be distributed. Additional demands for recreation and environmental protection are likely and could further significantly erode the supply basis. The debate has been lively in North America ever since the spotted owl debate. Major forest areas have been set aside in the process. According to Wood Resources International, 10 per cent of the world's production forest has been "locked up" for environmental reasons in North America (*The Economist*, 31 August 1996). That was before President Clinton set aside an additional 23 million ha just before leaving office (*Holz-Zentralblatt*, 19 February 2001).

Similar trends are observed in Europe (see, for example, ILO, 1998b), although so far without major impacts on the availability of productive areas. The effect of increased environmental and other pressures has been felt more through the rising cost of forest management. In Europe, the incremental cost of raw material to accommodate sustainable forest management, as redefined over the last decade, is 8-20 per cent, including monitoring and certification, according to industry sources (EU, 1999). A similar range of 5-25 per cent has been found in

other regions (Whiteman et al., 1999). In British Columbia, harvesting costs have reportedly doubled following the introduction of the code of forest practices (British Columbia Council of Forest Industries, 1998).

In Asia, a growing number of countries have restricted forest harvesting or introduced outright bans on logging. Some of these have meant nothing short of an end to timber harvesting in all natural forests in the whole country. These drastic measures have usually followed natural disasters or crises implicitly or explicitly linked to past forest practices (FAO/AFPC, 2000a). Countries concerned include the Philippines, Sri Lanka, Thailand and Viet Nam. The most significant ban in terms of area affected has been introduced by China, a country suffering from an immense "historical" shortage of forest resources. The situation has become more acute recently, when entire upper catchment areas of major rivers were taken out of production in the wake of the 1998 floods. The extensive damage and loss of life caused by the floods were largely blamed on poor forest management and harvesting practices. The shortfall in timber supplies is about 16 million m^3 or 20 per cent of consumption (*Holz-Zentralblatt*, 5 May 2000), and forest products have since become China's biggest commodity import (UN-ECE/FAO, 2000).

Even where harvesting is not simply prohibited in natural tropical forests, sustainable forest management will require a reduction in extracted volumes in the 20-60 per cent range compared to current practices. While it is unclear to what extent cost and volume figures can be extrapolated, it is clear that adjustment to sustainable forest management would have a profound effect on wood supplies in certain countries. It is believed to have greater potential to diminish wood supplies than the expansion of fully protected areas (Whiteman et al., 1999).

All of the above developments enhance the trend observed by Solberg and his co-authors (1996) in the mid-1990s: 20 per cent of the world forest area produces 60 per cent of all roundwood, and private owners with less than 10 per cent of area account for almost 40 per cent of the total harvest. This concentration of supply on a smaller, more intensively managed and often privately owned forest area is likely to gain momentum over the next decade and more of it will be outside industrialized countries.

Growing importance of plantations

While national forests are retreating or withdrawn from production, plantations are expanding at an unprecedented rate. According to the FAO (1999), the growth of plantation forests will be equivalent to 40 per cent of that in natural forests in Asia, Oceania and Latin America by the year 2010. An inventory in 1995 found more than 43 million ha of industrial plantations, with active planting mostly in Asia (China, India, Indonesia, Thailand, Viet Nam) and South America (Argentina, Brazil, Chile, Uruguay). To these should be added New Zealand and, more recently, Australia.

A study commissioned by the Australian Government (ABARE, 1999) suggests that plantations currently represent less than 3 per cent of world forest resources, but one-third of roundwood production. This share is set to expand rapidly and should reach almost half of world industrial timber output by 2040 (see table 3.2).

Table 3.2. Predicted contribution (%) of plantation wood to wood supply, 2000-40

	2000	2020	2040
Africa	20	39	40
Asia	32	46	48
Europe and former USSR	46	53	55
North and Central America	22	29	31
Oceania	55	66	67
South America	63	65	66
World	35	44	46

Source: ABARE, 1999.

Many of the fast-growing plantations are going to be in the southern hemisphere, particularly in countries where both the natural and the investment climates are favourable and where large chunks of suitable land are available. Estimates of plantable land span an enormous range from 345 to 758 million ha globally, which looks wildly optimistic in view of the competition from other land uses. Some countries, however, clearly have considerable potential, even allowing for the fact that forestry is not the only taker. An example is Argentina, where President de la Rua has declared forestry a priority sector. The country is in the process of establishing 2 million ha of plantations by 2010, up from 750,000 ha in 2001. The latter represent only 15 per cent of the 5 million ha of suitable land for which there is no competition from alternative land uses (Guedes Filhos, 2001).

CO_2 sequestration – A boost to plantation forests?

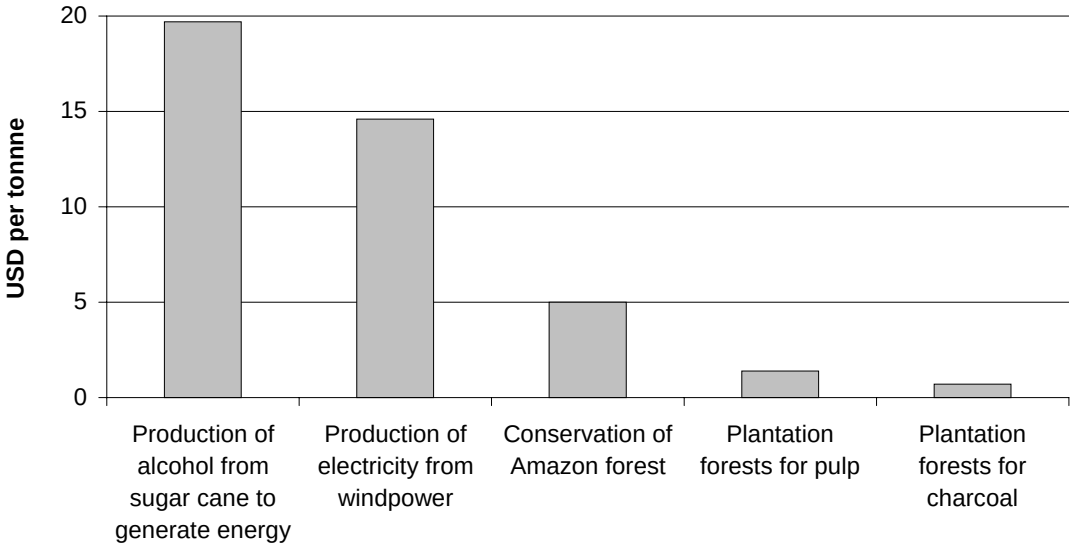
As has been alluded to earlier, the United Nations Framework Convention on Climate Change and the Kyoto Protocol might give a big boost to investment in forestry, if carbon retention by forests were to be included under the clean development mechanism proposed in article 12 of the Protocol. The fourth Conference of the Parties in The Hague in 2000 has failed to arrive at an agreement on this and other matters.

But there is obviously potential. Carbon dioxide (CO_2) is the most important greenhouse gas in terms of volume. Forests are second only to the oceans as the world's most important CO_2 sink. There is about 1 tonne of carbon dioxide in 1 m^3 of timber (EU, 1999). Opportunities for forestry to enter into carbon offset trading could arise from preventing releases of carbon dioxide from standing forests into the atmosphere by reducing deforestation and forest fires or improved forest management, including reduced-impact logging. Forests could also act as carbon traps, increasing carbon stocks in standing tree biomass via tree planting or the regeneration of degraded forests. The latter option is often referred to as "carbon sequestration" (CIFOR/UoM, 2000). Among the 97 pilot projects under way in 1998 to test "activities jointly implemented", there were no fewer than 14 forestry projects. A study prepared for the UNDP estimates that investment could be as high as US$7 billion annually (Costa et al., 1999).

Many – perhaps most – observers, including the FAO (1999), expect developing countries to be the main beneficiaries, with increased investment

leading to technology transfer, job creation, institutional capacity development and local social and environmental benefits. However, even if agreement about the mechanism as such can be reached, there is reason to be sceptical concerning the impact. Cost estimates for alternative forms of CO_2 reduction in Brazil, shown in figure 3.1 below, favour forestry over other investments, but put plantations ahead of all other alternatives by a big margin. Plantations are a very good investment even without carbon credits. With that additional advantage they would beat other forestry interventions hands down.

Figure 3.1. Cost of eliminating 1 tonne of atmospheric CO_2 under Brazilian conditions



Source: IPEA (Instituto de Pesquisa Economica Aplicada), quoted after SBS email network, 17 November 2000.

So are plantations a panacea? Probably not. For one, the commonly heard argument that plantations "spare" natural forests is, at best, superficial. Exceptions such as New Zealand notwithstanding, the competition from plantation timber often renders the management of natural and secondary forests economically uncompetitive. Where no other factor redresses the imbalance in opportunity costs of maintaining such forests, the likelihood increases sharply that they will be subjected to unsustainable, one-off exploitation or converted to other uses altogether. Secondly, plantation development has given rise to major social conflicts in a number of countries, as will be seen in Chapter 5. Thirdly, plantation development will most likely be very concentrated in a few countries and regions. Japanese firms, for example, have concentrated plantation investment in countries with a stable political and economic environment, large tracts of land and an absence of conflicts over natural forests. Ten of the 17 major plantation projects in 1998 were located in Australia and New Zealand.

While the forces discussed above may have attained unprecedented strength and reach, none of them is new. The last of the forces to be considered here has arguably only developed and influenced globalization in the forest industry over the last 15 years.

3.4. The drive towards sustainable development

Environmental concerns over deforestation and degradation in the tropics and the poor health of forests in the northern hemisphere have kindled an intensive debate about forests and forest management in the media and in policy development. Some of the repercussions have already been mentioned in connection with resource availability. These are symptoms of wider political developments and changes in public opinion and consumer behaviour.

Political developments

At the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, forests were among the most controversial issues considered. Because of the marked North-South polarization over the matter, the non-legally binding Statement of Forest Principles and Chapter 11 of Agenda 21 were the only statements on which agreement could be reached.

The biggest step at UNCED was the general adoption of a concept of sustainable development based on an equilibrium between three components, namely:

- economic development;
- conservation of the environment; and
- social justice.

Forests have remained high on the international agenda ever since. The ensuing period was characterized by confidence-building between industrialized and developing countries and by a broad debate and consultation with a wide spectrum of stakeholders. The latter have included governments, non-governmental organizations and the private sector – both industry and workers' organizations. A series of intergovernmental forums was set up under the auspices of the United Nations Commission for Sustainable Development. The first was the Intergovernmental Panel on Forests (IPF) from 1995-97, which had the objective of agreeing on proposals for action to support the management, conservation and sustainable development of all types of forests. The Panel adopted over 100 negotiated proposals for action on a wide range of subjects, but left pending the questions of trade and environment and whether to begin negotiation on a global forest convention.

In order to advance discussion on these points and to pave the way for implementation of the agreed action proposals, the Intergovernmental Forum on Forests (IFF) operated from 1997 until 2000 as a successor to the IPF. Most recently, the United Nations Forum on Forests was created in 2000. Intended as a facilitating and coordinating, rather than operational, body, it has a mandate to establish a coherent, transparent and participatory global framework for policy implementation, coordination and development (United Nations, 2000).

Promoting sustainability through the market? Certification

A separate force pushing in the same direction has emerged in the form of certification for forest management and labelling of forest products. A number of certification systems have emerged over the past ten years aimed at providing independent monitoring and evaluation of forest management as "good practice" or "sustainably managed", as defined in a published standard, and communicating this through labels on forest products. The idea of certification was launched originally by environmental and social NGOs as a positive alternative to tropical timber boycotts favoured by other groups and adopted by numerous local governments, particularly in Europe. It has since been taken up by the forest industry, forest owners and some national governments. It is intended to provide an incentive for good forest management through better access to markets and possibly through higher prices for certified products paid by environmentally and socially conscious consumers.

Certification is referred to as "market driven" because it is voluntary and does not involve governments as a regulatory authority. Demands for certified forest products are not usually articulated by actual consumers. They come rather from intermediate users, such as DIY stores, furniture makers or retailers, and wooden housing manufacturers in the case of solid wood products and publishing houses in the case of pulp and paper. These often very large clients of the forest industry (see above) have been organized into "buyers' groups" in a number of countries and have increased pressure by publicly committing themselves to selling only certified products after a certain deadline. Reports periodically commissioned on the subject by the International Tropical Timber Association (ITTO) are among the best sources for detailed information and analysis on the subject (see, for example, ITTO, 1996).

The repercussions of the concept of sustainable development and of certification in the forestry sector and the social and labour implications are discussed in the following chapters.

4. Where is it moving to? A new international division of labour and sustainability

The analysis of the forces and mechanisms of change in the preceding chapter has already yielded a number of pointers as to the direction of change. This chapter will attempt to complete the picture by looking at the internal dynamics of the sector and the search for a new vision for the future of the forest industries.

4.1. Structural change

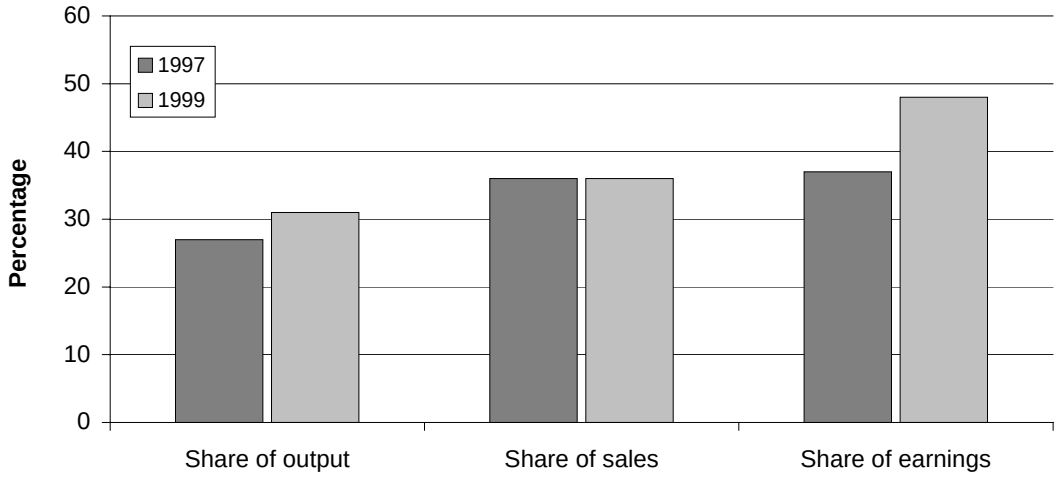
Structural change – the variation in the size, composition and scope of the enterprises that make up a sector is documented to differing degrees for the various segments that make up the forest industries, and the availability of information also varies by region. The following draws heavily on Europe for examples, but the trends are borne out by evidence from all continents. The segment in which developments are being traced most closely are the pulp and paper industries.

Process and outcome

The restructuring process in the pulp and paper industries has been described in some detail in an earlier report (ILO, 1992). Technological developments and massive economies of scale were identified as the prime drivers of the trend to bigger production units and firms. The same logic continues to apply today. The industry in the European Union has reduced the number of paper machines by 60 per cent over the past 25 years, but total capacity has nearly doubled over the same period (Hazley, 2000).

The mergers and acquisitions shown in box 2.1 in Chapter 2 predominantly concern the pulp and paper industry and show that concentration has been growing faster than ever in all regions. Most consolidation has in fact taken place between firms that were big already. Only 11 out of 20 firms in the top 150 list published by Pulp and Paper International in 1992 were still the same in 1999. The number of firms producing more than a million tons of paper and board per year has grown to 56. The top ten companies have significantly increased their share of output, sales and above all earnings, underpinning the economic rationale for bigger firms. This is reflected in figure 4.1.

Figure 4.1. Top ten pulp and paper producers, 1997 and 1999



Source: Matussek et al., 1999.

Compared to other sectors, the levels of concentration in the pulp and paper industry are still low. International Paper, the biggest company in terms of sales, still accounts for only 6 per cent of the world market, even after the Champion deal worth US$7.3 billion. Concentration has also risen significantly from a regional perspective, but remains moderate, with the top ten firms sharing no more than half the market in all regions except Japan, where they account for more than two-thirds (Burt, in *Financial Times*, 16 February 1999).

Several analysts suggest that the mergers and acquisitions are also motivated by concern at the lacklustre performance of pulp and paper shares relative to other industries, which can lead to problems with raising capital (PriceWaterhouseCoopers, 2000). It is hoped that more control over output will enhance the pricing power of the firms and help to avert the "boom and bust" cycle of production and revenue. The CEO of Stora Enso agrees, and has suggested that there is now a need to consolidate and shut down plants. This has started to happen. Mill and machine closures in the wake of mergers and acquisitions brought about the first ever decline in United States pulp and paper capacity in 1999 (*The Economist*, 20 May 2000). Examples are the closure of four containerboard mills following the merger of Jefferson Smurfit and Stone in 1999, with four more closures planned for 2000, and the four corrugated packaging plants which Weyerhaeuser plans to terminate after its takeover of MacMillan-Bloedel (*The PACEsetter*, March 2000).

With the exception of pulp and paper manufacturing, the forest industries remain heavily dominated by small and medium-sized enterprises. Their importance tends to be underestimated, as establishment surveys do not cover production units with fewer than 20 employees (EU, 1997). A very sizeable proportion of the "industry" is actually artisanal.

The wood-processing industries have experienced structural change of a similar nature but on a much bigger scale than the pulp and paper industries with increased vertical and horizontal integration. Sawmilling in the European Union has witnessed the closure of many non-profitable mills, mergers of small production units and increased vertical integration through numerous mergers and

acquisitions. Higher value added was often achieved through subcontracting (EU, 1997). The number of sawmills in Germany fell from 12,000 in 1945 to 2,300 in 2000 (*Holz-Zentralblatt*, 24 November 2000). A few large mills with an output of up to 800,000 m^3/year acquired a dominant position (Issleib, 2000). In Austria, 5,000 sawmills were active in 1950 and produced 3.5 million m^3 compared to 1,700 mills in 1999 producing 8 million m^3 (*Holz-Zentralblatt*, 17 September 1999). Structural change in the Polish sawmilling industry has only just begun. Productivity in 1999 was only 350 m^3/worker/year, or one-third of Scandinavian levels (*Holz-Zentralblatt*, 27 August 1999).

Multinational firms are also in the making among European sawmillers: while the five biggest among them had an output of 4 million m^3 in 1984, that number had tripled by 2000 (*Holz-Zentralblatt*, 8 March 2000). The picture is similar in panel manufacturing but the process is much more advanced because of the high investment threshold in panel mills. Fully fourth-fifths of the revenue of Austrian panel production is generated in production facilities located abroad in some 40 European countries (*Holz-Zentralblatt*, 26 February 2000). The emergence of new products tends to speed up this development. Investment in the rapidly growing production of oriented strand board (OSB) and medium-density-fibreboard (MDF) in Europe has been dominated by the larger panel makers (*Holz-Zentralblatt*, 14 November 1997). In Brazil, 60 per cent of all plywood comes from the 40 biggest of the country's 300 mills (ABIMCI, 1999).

In many countries, mechanical wood industries are integrated with pulp and paper makers and thus benefit from the latter's financial clout. Half the sawmilling capacity in Finland belongs to the three remaining forest industry groups which own all of the pulp and paper capacity (Pajuoja, 2000). Similarly, the 18 biggest sawmills in Chile represent 70 per cent of total capacity and belong mostly to the two remaining pulp and paper producers. In Brazil, several pulp makers have opened sawmills in the past few years.

Furniture is one of the largest manufacturing sectors in the European Union, but a very fragmented one with more than 90,000 firms and a mere 35 employees per firm on average (EU, 1997). There are remarkable differences between countries, however, as regards both structure and evolution. The average firm in Germany, with a workforce of 78, is seven times larger than in France and a dozen times bigger than its counterpart in Italy. A comparison of the structural change in European countries from 1990/91 to 1996/98 in tables 4.1 to 4.4 shows that in Germany there has been a clear concentration at the top. It may be worth noting that all the top ten German manufacturers have subsidiaries abroad, mostly in Central and Eastern Europe. Similarly, France saw a sharp contraction in the number of firms and the emergence of some important groups. In Italy, by contrast, the spectrum has been split down the middle, with both the biggest and the smallest firms increasing their share at the expense of those in the middle. In Spain, it is the medium-sized firms that are growing, after fully 25 per cent of all firms failed to survive the recession in the mid-1990s. There has been virtually no structural change in the United Kingdom, which may be due to the major shake up in the early 1980s. The Danish furniture sector has remained very stable, without even the upsets experienced in the United Kingdom and Spain.

Factors that will push in the general direction of bigger firms are technology and export markets. The latter are seen as attractive in situations where competition with imports in the lower price range is not promising. Exports require investments in market intelligence, sales and services that are beyond small firms. Use of computer numerically controlled (CNC) machines is spreading in the industry, because of their versatility and precision. The threshold for using them economically has been estimated at around 50 employees, i.e. well above the current median firm size (EU, 1997). Currently, the overall status in the European Union is that the largest 100 furniture groups account for 19 per cent of total production (UEA, 2000).

Poland, one of the biggest furniture producers in Eastern Europe, displays a strongly skewed size distribution. Out of a total of 20,000, firms the 12 biggest employ a quarter of the workforce and generate 60 per cent of total output. Four-fifths of the biggest firms are controlled by German investors and account for 80 per cent of all exports (*Holz-Zentralblatt*, 21 June 2000). This bears some resemblance to the furniture industry in Malaysia (Ho et al., 2001) and in Brazil which has 13,500 furniture makers (SBS, 1999) but where those involved in exports are rapidly expanding their share.

A marked trend towards concentration has been observed in the United States furniture sector. Masco, a consumer products corporation in which furniture makes up 40 per cent of turnover – some US$3 billion – is the largest furniture maker in the world. Sales in 1999 were US$6.3 billion, up from US$2 billion in 1994-95 (IFBWW, 2000).

Table 4.1. Structural change in the United Kingdom furniture industry: Companies and employees by size

Number of employees	Companies	Proportion of total number of companies (%)	Employees	Proportion of total number of employees (%)
1991				
20-49	635	57.7	20 600	21.9
50-99	246	22.3	17 800	19.0
100-199	133	12.1	19 500	20.8
200-499	69	6.3	21 900	23.3
> 500	18	1.6	14 100	15.0
Total	1 101	100.0	93 900	100.0
1998				
20-49	624	58.0	18 600	20.9
50-99	239	20.0	15 900	17.9
100-199	123	14.0	19 400	21.8
200-499	58	4.0	20 600	23.2
> 500	18	4.0	14 300	16.1
Total	1 062	100.0	88 800	100.0

Source: UEA, 2000.

Table 4.2. Structural change in the German furniture industry: Companies and employees by size

Number of employees	Companies	Proportion of total number of companies (%)	Employees	Proportion of total number of employees (%)
1990				
20-49	665	44.0	22 463	12.3
50-99	354	23.4	24 013	13.2
100-199	258	17.1	35 550	19.5
200-499	180	11.9	54 379	29.8
> 500	53	3.5	45 944	25.2
Total	1 510	100.0	182 349	100.0
1998				
20-49	627	41.5	18 441	10.9
50-99	347	22.9	20 511	12.1
100-199	280	18.5	33 631	19.9
200-499	194	12.8	49 869	29.4
> 500	64	4.2	46 925	27.7
Total	1 512	100.0	169 377	100.0

Source: UEA, 2000.

Table 4.3. Structural change in the Italian furniture industry: Companies and employees by size

Number of employees	Companies	Proportion of total number of companies (%)	Employees	Proportion of total number of employees (%)
1988				
20-49	1 070	66.7	36 080	37.9
50-99	391	24.4	29 480	30.9
100-199	108	6.7	15 840	16.6
200-499	30	1.9	9 020	9.5
> 500	4	0.2	4 840	5.1
Total	1 603	100.0	95 260	100.0
1996				
20-49	1 361	74.4	39 000	42.0
50-99	326	17.8	22 563	24.3
100-199	94	5.1	12 765	13.8
200-499	43	2.4	12 392	13.4
> 500	5	0.3	6 086	6.6
Total	1 829	100.0	92 806	100.0

Source: UEA, 2000.

Table 4.4. Structural change in the French furniture industry: Companies and employees by size

Number of employees	Companies	Proportion of total number of companies (%)	Employees	Proportion of total number of employees (%)
1990				
20-49	513	59.3	16 753	22.5
50-99	196	22.7	14 450	19.4
100-199	89	10.3	12 703	17.0
200-499	51	5.9	14 594	19.6
> 500	16	1.8	16 087	21.6
Total	865	100.0	74 587	100.0
1998				
20-49	403	58.0	13 411	17.0
50-99	139	20.0	10 256	13.0
100-199	97	14.0	15 778	20.0
200-499	28	4.0	10 256	13.0
> 500	28	4.0	29 189	37.0
Total	695	100.0	78 890	100.0

Source: UEA, 2000.

Outlook

The forest industries continue to be dominated by small and medium-sized enterprises as can be observed for the European Union in table 4.6. In the European Union, over 90 per cent of firms still have fewer than 20 employees (Hazley, 2000). The situation is very similar in most other parts of the world, even without allowing for the existence of a huge informal sector in most developing countries.

Table 4.5. Structure of the forest industry in the European Union in 1998

Subsector	Production value (million euro)	Per cent	Value added (million euro)	No. of enterprises (1995)	Employment	Per cent	Employment/ firm
Mechanical woodworking	60 158.6	25	18 760.7	29 113	526 679	29	18
Pulp, paper and board manufacturing	55 223.5	23	16 066.2	930	217 175	12	233
Paper and board converting	55 738.4	23	18 070.0	5 009	381 582	21	76
Furniture	68 598.6	29	23 731.8	19 409	675 793	38	35
Total	239 719.1	100	76 628.7	54 461	1 801 290	100	

Source: EU, 1999.

It is equally clear, however, that the trend towards consolidation and concentration accompanied by vertical and horizontal integration will continue in

all sectors of the forest and paper industry and is more likely to accelerate than to slow down (PriceWaterhouseCoopers, 2000; EU, 1997). The president of the German sawmillers' association has recently predicted a reduction from 2,300 mills in 2000 to 500-700 in 2020 across all size classes. He pointed to competition from Asian and South American plantations and the "flood of Russian sawnwood" which would spill into Central Europe sooner or later (*Holz-Zentralblatt*, 24 November 2001). In the furniture industry, the emergence of a single world market is expected to double the speed of concentration in Germany, one of the biggest producer countries (Haas, 2001). The conclusion of a study of the wood industries in France applies to most other countries: in order to survive, many small firms will have to take a big step and manage the transition from craft to industry (Lochu, 2000).

Another qualitative change concerns the scope of structural change. According to Mr. Niemelä, the president of UPM-Kymmene, the past phase of consolidation, which has left the five largest forest products companies in control of less than 20 per cent of the world market, has been the result of amalgamation within regions. The next phase will be on a more global scale (*Skogsindustrierna*, special EU edition, 2001).

Increase in value added

A trend superimposed on structural change is the effort to increase the level of value added to products within firms and countries. This has been a long-standing trend reflected in the trade in forest products, which has seen a rise in sawnwood and semi-manufactures relative to roundwood, and in paper and paper products relative to pulpwood and pulp. This trend has also been supported by recent tariff reductions (Brooks, 1999).

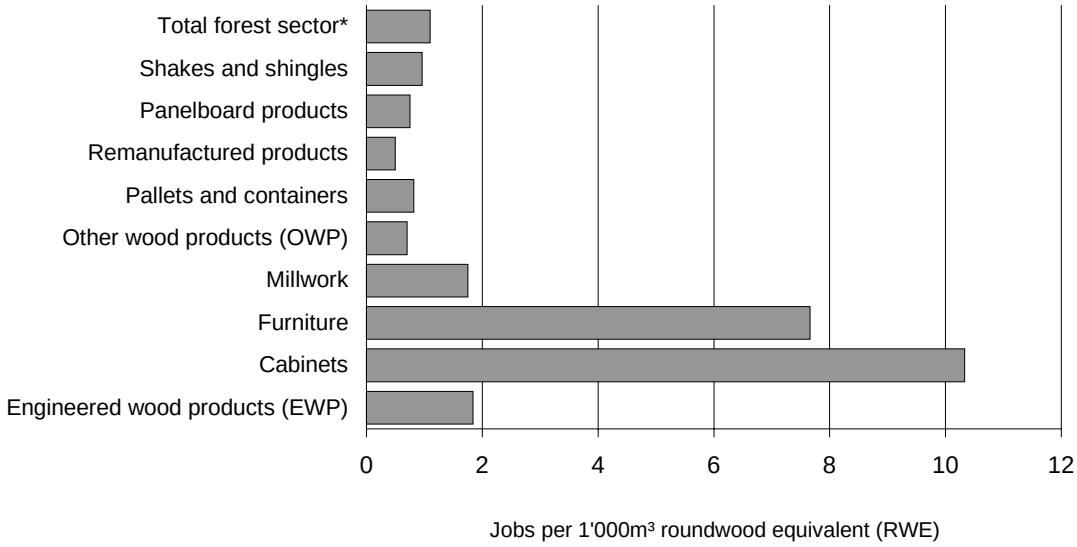
A good example of this drive is Indonesia. The country experienced a boom in log exports in the 1970s. Starting from almost nothing, it became the biggest exporter of tropical timber within a decade. In the 1980s, the Government promoted further processing, primarily in the form of plywood. A ban on log exports was introduced as a supportive measure in 1985 to cut out the competitors, mostly from Japan. In record time, Indonesia emerged as the world's biggest plywood exporter. It generated far higher revenues from its exports during this period than Malaysia, which was still exporting mostly roundwood (ILO, 1991). During the 1990s, plywood production remained stable, but the production and export of wooden components, furniture and pulp and paper rose sharply (Erwidodo et al., 2000).

Interest in promoting further processing is widespread and by no means limited to tropical timber exporters. Several Latin American countries, the north-western states of the United States and the Scandinavian countries are pursuing similar objectives. Besides the higher contribution to the national or regional economy, countries are interested in the employment potential of secondary processing for local development. In the case of British Columbia, this is also seen as one option for dealing with the emerging impact of reduced timber access and highly competitive markets. An additional factor in favour of this strategy is that the skill sets of displaced forest industry workers are, at least to a limited degree, matching those required in value added industries. According to Wilson (1996), the

public is increasingly demanding maximum local activity from the harvest in exchange for an acceptable level of environmental impacts from forest industries.

Clearly most secondary manufacturing is far more employment-intensive per cubic metre of roundwood, and this employment is in most cases additional to primary processing. Figure 4.2 shows the employment intensities of the various segments based on studies in British Columbia (Wilson et al., 1999).

Figure 4.2. Jobs per 1,000 m³ roundwood equivalent in the British Columbian forestry sector



Notes: RWE = roundwood equivalent. * Delcourt and Wilson, 1998.
Source: Wilson et al., 1999.

Some countries that have left markets to their own devices with regard to value added production have seen very slow development. New Zealand, for example, still exports one-third of its timber harvest as roundwood after more than three decades of forest industry development (MAF, 2000).

In Chile, roundwood, wood chips and pulp are still the dominant export products and it is not until 2010 that the country hopes to reach a ratio of 50:50 between primary and secondary processing (INFOR, 1998). Even where deliberate policies have been put in place, progress has been slow. Shipments from Côte d'Ivoire are still mostly sawnwood, i.e. primary processing (Gnabeli, 2001). In Gabon, the share of processed exports has actually fallen and almost all of that share is in the form of roundwood. The latter case has been explained by the fact that forestry in Gabon is vertically integrated with European and Asian manufacturers feeding mills in their home countries (François, 1999). One consequence is that forestry sector industries employment per cubic metre produced in Gabon is half that of Côte d'Ivoire.

In order to create opportunities and incentives for domestic further processing, a number of countries have restricted roundwood exports through bans, differential taxes or export duties. Apart from the prominent example of Indonesia, these countries include Malaysia and several West African producers, as well as (more recently) Papua New Guinea and the Solomon Islands, and British Columbia, which permits log exports only if availability exceeds domestic processing capacity. This has meant that the province exports virtually no roundwood, in sharp

contrast to its southern neighbour (British Columbia Council of Forest Industries, 1998).

Malaysia and Indonesia have used export restrictions rather cleverly in several stages to encourage further processing, thereby counteracting the tariff escalation such products face in many importing countries. Such restrictions are on the increase and have had a major impact on trade patterns (Bourke and Leitch, 1998).

In a largely mature industry with slow overall growth, rapid expansion of one firm or producer country tends to come at the expense of another. The surge in plywood exports from Indonesia, for example, has sent ripples around the world. The country most seriously affected has been Japan, which used to rely heavily on roundwood imports for both its sawmilling and plywood industries. Both these industries have taken a severe beating over the last two decades as roundwood supplies have increasingly dried up and a large proportion of the mills have closed down. As bigger mills were disproportionately dependent on imported roundwood, the structure of the industry has shifted in favour of smaller firms, a rather unique phenomenon (ILO, 1991; Fujiwara et al., 2001.).

4.2. A shifting focus of investment

Japanese FDI has also shifted in response to the changing situation. The first of the three boom periods of forestry FDI from Japan was the early 1970s and was dominated by "trading companies" engaged in resource development, initially in North America and South-East Asia and later in Oceania and South Africa. The second boom, towards the late 1970s, focused on investment in processing in North America, Chile and the European Union. The last wave began in the late 1990s in the pulp and paper industry. It aims to develop resources in the form of almost 4 million ha of plantations and to establish pulp and paper processing facilities (for a detailed account see Fujiwara et al., 2001). The overall picture has thus been one of sometimes drastic restructuring in primary processing, of an emphasis on expansion outside Japan in the pulp and paper industries and, as noted earlier, of divestment and relocation in furniture making.

Is that a pattern that could repeat itself in other countries? Clearly, the Japanese forest industries had all the odds against them: dependence on raw material imports, severe competition for labour, high wage costs and, since the mid-1980s, a high external value of its currency. The forest industry in other countries may be much less exposed, but similar shifts are observed elsewhere, albeit on a smaller scale and in a more gradual fashion.

As has been noted earlier, many of the mergers and acquisitions in the pulp and paper industry in North America and Europe aim at consolidation rather than expansion. Domestic investment by the Finnish pulp and paper industry has mostly been aimed at upgrading existing mills while the firms have grown abroad. Two-thirds of total investment was outside Finland in 1998 (Pajuoja, 2000).

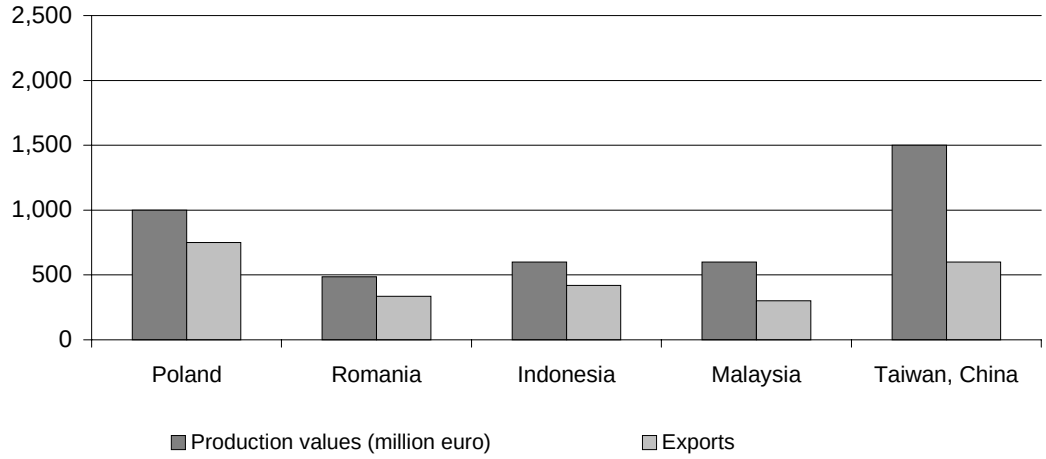
A major sawmiller in Austria, Schweighofer, has announced that no further expansion of the firm is planned in its home country, and capacity is to be shifted abroad. Among the reasons for this move the firm cites environmental regulation

(noise measurement), labour costs (on-cost), cost of transport, inappropriate sawmilling development programmes, government "red tape", and a timber supply that is too expensive, too limited and discontinuous (*Holz-Zentralblatt*, 9 October 1998). A number of German sawmillers have expanded into Eastern Europe. Likewise, sawmillers in France envisage expansion mostly abroad, and wooden component manufacturers are contemplating a relocation of operations to Central and Eastern Europe in order to cut costs (Lochu, 2000).

According to the industry association, most investment in German wood and furniture industries goes into rationalization and maintenance rather than expansion (HDH/VDM, 2000). For example, Schieder Möbel, Europe's biggest single furniture maker, has expanded mostly in Eastern Europe and today only 2,700 of its 9,000 workers are based in Germany; more than 5,000 are employed in Poland, and the rest in three other European countries (IFBWW, 2000). Trade statistics sometimes obscure rather than highlight such moves. For example, the 3 per cent growth in German furniture output recorded for 1997 is almost entirely the result of imports from subsidiaries in Eastern Europe (Klaas, 1997).

As figure 4.3 shows, the export quota in many of the countries where furniture exports have been rising rapidly over the last decade is between 40 and 80 per cent.

Figure 4.3. Exports for some major low-cost furniture producers in 1996 (million euros)



Source: EU, 1997.

To these should be added Hungary, with an export ratio of 80 per cent, and Slovakia, with more than 50 per cent (*Holz-Zentralblatt*, 12 April 1999). As can be observed in table 4.6, there are currently only four developing countries among the 15 largest furniture exporters: Brazil, China, Mexico and Malaysia. Among net exporters, however, they already account for ten out of 15 (Kaplinsky and Readman, 2000). The eroding trade balances for furniture in the United States and Europe suggest that the furniture industry in developing countries and in Central and Eastern Europe will continue to grow much faster, largely at the expense of domestic production in the United States, the European Union and Japan. Much of this shift is fuelled by retailers and/or manufacturers from importing countries sourcing products in emerging exporting countries.

Table 4.6. Top 15 furniture exporters,1999

	Gross export value 1998	Net export value 1994	Net export value 1998	Net export change 1994-98 (%)
Italy	8 630 577	6 105 304	7 831 184	28
China	2 821 435	1 381 813	2 725 245	97
Canada	4 252 591	325 575	1 804 207	454
Denmark	2 022 567	1 412 453	1 323 069	–6
Mexico	1 841 054	259 010	1 190 136	359
Malaysia	1 115 158	698 678	1 052 131	51
Spain	1 443 719	251 493	741 453	195
Sweden	1 341 673	254 047	494 747	95
Romania	435 571	375 898	382 337	2
Indonesia	355 065	754 535	339 029	–55
Czech Republic	639 630	123 825	331 622	168
Hungary	430 546	–1 126	228 092	2 035
Brazil	342 880	229 978	135 197	–41
Korea, Republic of	187 803	28 289	76 515	170
Slovakia	195 571	107 176	63 424	–41
Total of rest	18 866 371	–12 225 777	–21 999 129	80
Total	44 922 211	–363 909	–3 374 799	827

Source: UNCTAD/ITC (http:/www.intracen.org), after Kaplinsky and Readman, 2000.

The trend towards subcontracting of labour-intensive operations, such as upholstering or the production of low-value furniture and wood products, to low-wage countries is considered unstoppable by some observers and producers (*Holz-Zentralblatt*, 14 January 2000). Relocation has also occurred on a large scale in Asia, where almost all furniture enterprises from Hong Kong (China) have relocated to mainland China, and those from Taiwan (China) and Singapore are following suit (UN-ECE/FAO, 2000). Expanding markets, future raw material sources and low-cost production locations all point in the same direction. In the words of Peter Massey, Head of Wood Products, Commonwealth Development Corporation: "This [the forest products] industry is moving from north to south and from west to east" (*Financial Times*, 7 December 1998). The comment was mostly directed at the large-scale lumber and pulp and paper industry, but it would appear to hold true for other subsectors of the forest industries as well.

4.3. The move towards sustainability

Towards an international consensus on a definition of sustainability in forestry

In pursuance of the agreements adopted at the United Nations Conference on Environment and Development (UNCED) in 1992, initiatives have been launched around the world to define the notion of sustainable forest management in more specific and operational terms.

These new definitions of sustainability have broadened the traditional concept, which was based on sustaining the production of wood and timber. Considerable progress has been made in formulating a common vision. Agreements have since been reached in nine regional forums involving some 140 countries. The countries have adopted sets of criteria and indicators, which are a blend of conditions considered vital to ensure the conservation and maintenance of the protective, productive and social functions of forests and of conditions deemed necessary for forests to contribute to sustainable development at large.

National/regional criteria and indicators define sustainability on the basis of national and local priorities and provide bases for assessment and monitoring of status and trends. The same concept has been applied at management unit level with very similar elements but with more weighting to allow for local conditions and complementarity between forest holdings. From an international perspective, criteria are very similar across the regions and the concept and definition of sustainability are virtually the same. The degree of implementation varies considerably between countries. They continue to be developed further in all regions as the components of sustainability and their interrelationships are better understood. Even when the conceptual and practical problems of definition and monitoring through criteria and indicators have been resolved, there will not be a final definition of sustainability; by its very nature, it is a reflection of the needs and values of society and will continue to evolve with those.

A growing recognition of the social dimension and of the participation of major groups

Over the years there has been a steady trend towards widening the debate beyond governments and beyond environmental and economic concerns. Throughout, these negotiations and discussions have endeavoured to follow transparent and participatory practices. The United Nations Intergovernmental Forum on Forests is to allow for multi-stakeholder dialogue at all its sessions, with the representation of the major groups identified in Agenda 21, including industry, workers and indigenous peoples. The work of the Forum is to reflect the three pillars of sustainable development, and it is suggested that social development be considered as a special theme (United Nations, 2000). International policy dialogue has merely been the tip of the iceberg.

Adoption of the sustainable development approach by governments and the private sector

International discussions and commitments have led to countless national initiatives by both the public and the private sector. Many countries have amended their forest legislation to reflect the broader notion of sustainability. Some 120 countries have formulated national forestry programmes to implement the concept.

The producer and consumer countries of tropical forest products constituting the International Tropical Timber Organization had set themselves the very ambitious target of sustainable management of all tropical forests by the year 2000. Likewise, major donor agencies have reviewed their policies. The World Bank, for

example, has established an “environmentally and socially sustainable development forests team” and is about to complete a total overhaul of its strategy (Blaser and Douglas, 2000). The European Union (1999) calls for its forest industry development strategy to pursue harmony between environmental protection, competitive economic development and social development.

Similarly, the World Business Council for Sustainable Development, an association of multinational enterprises, has launched the “Sustainable forest industry” project. This followed on from a study entitled “Towards a sustainable paper cycle” which was commissioned by the pulp and paper industry and published in 1996 by an environmental think tank. Sustainable forest management has thus become a complex goal to define, let alone achieve. The Sustainable Forestry Initiative in the United States, even though it is basically limited to environmental objectives, has been described as “a bold and ambitious effort to revolutionize forest management and the entire forest products industry” (AF&PA, 2000). The Council advocates a balance between environmental protection, social equity and economic growth. This is also the objective of the accord on plantations concluded by the forest industry in New Zealand (MAF, 2000). In Brazil, the tropical forest industry is aiming at a model of development that is socially just and economically and environmentally viable (ABIMCI, 1999).

Investors are also paying increasing attention to the concept of sustainability. A Dow Jones sustainability index (http://www.sustainability-index.com), which provides a systematic assessment of firms was launched in September 1999. Stora Enso was the first forestry company to be included (*Holz-Zentralblatt*, 1 October 1999). More and more companies and associations publish statements and reports about their social responsibility, which tend to include environmental performance, business conduct, community activities and employee relations. Certification is increasingly seen as a means of testing the extent to which the concept is being put into practice.

The advance of certification

After a slow start in the early 1990s, certification has taken off in recent years. The forest area certified has risen to 60 million ha. The globally operating Forest Stewardship Council (FSC) and the regional Pan-European Forest Certification (PEFC) are the major schemes at the moment. The trend looks set to accelerate further as most of the top 100 forest industry companies will at least initiate certification by the year 2002, regardless of location (PriceWaterhouseCoopers, 2000).

Certification standards developed in countries or groups of countries often use international sets of criteria and indicators as the starting point. This is the case for the PEFC, which is based on the criteria and indicators adopted by the Ministerial Conference on the Protection of Forests in Europe. Efforts in Canada have used the Montreal criteria for temperate and boreal forests. Standards in tropical countries such as Malaysia and Indonesia have made use of the ITTO Guidelines for the sustainable management of tropical forests. While most schemes are performance-based, there have also been attempts to introduce certification of management systems adapting ISO standards to forestry but these are being

progressively integrated or supplemented with performance-based schemes (ITTO, 1998a).

Certification was originally launched as a means to promote good forest management in tropical forests. This is also the thrust of a World Bank/WWF alliance aimed at getting 200 million ha certified worldwide. However, it is to date most advanced in industrialized countries, particularly in Europe. Even the FSC as the only global scheme, and one that met with resistance in Europe, has most area certified in the northern hemisphere. Certified forests in developing countries such as Brazil, Indonesia or South Africa are mostly plantations rather than natural forests. The trend is going to get stronger with the planned certification of major areas in Canada, Europe and New Zealand.

While this pattern was not intended, it could perhaps have been anticipated given the dominance of industrialized countries in international forest products trade. It has raised the question whether certification merely ratifies the status quo. Will it mean that well-managed forests get a label while others remain as they were, or will it be an incentive for improvements? While the first wave of certification often required little change in practices, it may be too early for a definite answer. In any case, certification is clearly here to stay. In most countries, the question is no longer whether or not to certify, but which system is most appropriate.

With the debate as to whether certification should be adopted or not largely settled, attention has now shifted to the risk of confusion and limited acceptance that may result from a proliferation of different schemes. There are increasing calls, not least from industry, for mutual recognition. Consultations have started on the compatibility and comparability of the different standards and on ways to harmonize concepts. Unfortunately, the debate promises to be long and controversial. In certification, as in sustainable development as a whole, social and labour aspects play an increasing role, as will be seen in Chapter 5.

To summarize: A complex matrix of superimposed moves

The above discussion has shown that the forest industries are indeed on the move in several ways. For some of these moves, rather straightforward cause-effect relationships exist. Others, like the structural changes, are both causes and effects, resulting in a trend-reinforcing feedback.

To summarize the analysis of the moves, it would appear that:

- globalization is gaining momentum in the forest industries, with trade rising disproportionately, often as “captive trade” induced by sourcing and FDI from importing countries;

- multinationals and transnational companies are more and more prominent in all segments of the forest industries. In recent years significant volumes of FDI from newly industrialized countries have added to the traditional flows. Over the past decade, even small and medium-sized firms have increasingly been internationalizing;

- firm sizes vary significantly between subsectors. Overall averages and concentration are still rather low, but structural adjustment is speeding up in all subsectors and overwhelmingly in the direction of bigger units with greater vertical and horizontal integration;

- raw material supplies have been shifting from natural to planted forests, from public to private and from north to south as well as west to east. They will continue to do so;

- future growth in consumption is going to be modest in traditional producer countries, but much faster in Eastern Europe, as well as in the developing and newly industrialized countries of Asia and Latin America;

- the direction of investment reflects the emerging regions of both future growth in consumption and raw material supplies. Private sector investment in forestry shows a pronounced preference for plantations over natural forest management. As a result, the centre of gravity of the industry is moving south and east;

- low-cost producers in developing countries and Eastern Europe have emerged for a number of products. Their capacity has often been established with FDI. Particularly in furniture, they have rapidly expanded their market share at the expense of traditional producers;

- the goal of sustainable development has been widely adopted in the forest products industries and is beginning to leave clear imprints on practices, particularly in forestry. In today's competitive markets, more and more firms have come round to the view that demonstrating that they are part of an environmentally and socially responsible organization can be a decisive advantage. Certification as a means of independently verifying and communicating the claim of sustainability or good stewardship in a credible manner is spreading and looks set to stay.

5. So what? Implications for decent work

This chapter is devoted to an analysis of the social and labour implications of the various moves detected in the previous sections of this report. These implications will be discussed under the four components identified in the ILO's decent work programme, namely:

- employment and income;
- social protection, with a focus on quality of employment;
- rights at work;
- social dialogue.

5.1. Employment

Jobs growing on trees? The volume of employment in the forest industries

The following review is based on an extensive search of a wide range of sources of employment data for the forest industries. It will still leave a lot to be desired. Reliable employment data are notoriously difficult to obtain, particularly in the form of consistent time-series. Even in countries with sophisticated data collection like Canada, big discrepancies have been found between sources (NRRC, 1997). Not surprisingly, in a number of cases, there are discrepancies in data for the same country and the same category of employment between national sources and the information obtained from international data sets like the UNIDO database on manufacturing employment or EUROSTAT, the statistical service of the European Commission.

One source of discrepancies is the definition used. Some sources include only what might be called "core forest industries employment" as defined in the International Standard Industrial Classification (ISIC), others go beyond these without being explicit as to what exactly has been added. The core categories considered here are:

- forestry (including logging);
- wood industries (excluding furniture);
- pulp and paper products;
- furniture (excluding non-wood furniture).

This excludes some groups that are directly employed in forestry, such as government forest services. It also excludes those responsible for essential services such as transport or involved in the marketing and trade of forest products, but not

employed by forest industries firms. The difference can be substantial. In British Columbia, for example, the four ISIC categories considered here together give a total forestry sector employment of 87,000 in 1999; if services such as transport, trade and government are included, total employment is 104,000, almost 20 per cent more.

Likewise, small businesses such as craftsmen form a substantial part of the total wood industry, but are not covered by industrial statistics which include only establishments with more than 20 employees.

Recently, inflated and rather misleading claims about the contribution of the forest industries to the national economy in the form of value added, exports, employment and others have been published invoking the notion of a "forestry cluster". One of the proponents of this concept, Hazley (2000), has based forest industry estimates for the European Union on all the above employment categories plus a second, wider circle of suppliers and services such as those manufacturing woodworking machines, glue for panels or fillers and coating material for paper. This goes as far as including publishing and printing because that industry uses paper. This is counter-intuitive, to say the least, and creates new areas of definitional uncertainty and the need for extrapolation and estimates.

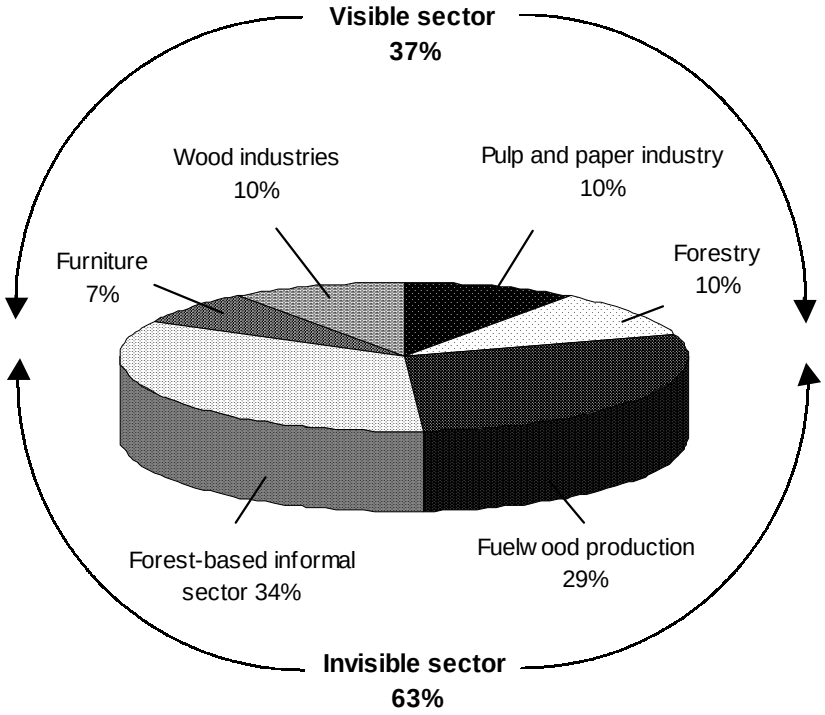
The estimates of global forest industry employment presented in table 5.1 and figure 5.1 below are based on formal sector jobs in forestry, wood products, pulp and paper and furniture making. Because records are so patchy in some important producer countries, the most recent data available, rather than a common base year, had to be used. In most cases, the data are for the late 1990s, but in some cases go back to 1991.

Table 5.1. Estimates of global forest-based employment (late 1990s)

Subsector	Formal sector employment (million full-time equivalents)	Informal and subsistence employment (million full-time equivalents)	Total by subsector (million full-time equivalents)
Forestry	4.7	13.6	18.3
Wood industries	4.6	9.1	13.7
Furniture	3.5	6.9	10.4
Pulp and paper	4.6	n.a.	4.6
Total	17.4	29.6	47.0

Note: n.a. = not available.
Sources: Formal sector compilation – various national and international statistics; informal and subsistence sectors – Poschen, 1997.

Figure 5.1. Estimate of global forest-based employment by subsector



Source: Poschen, 1997 (updated).

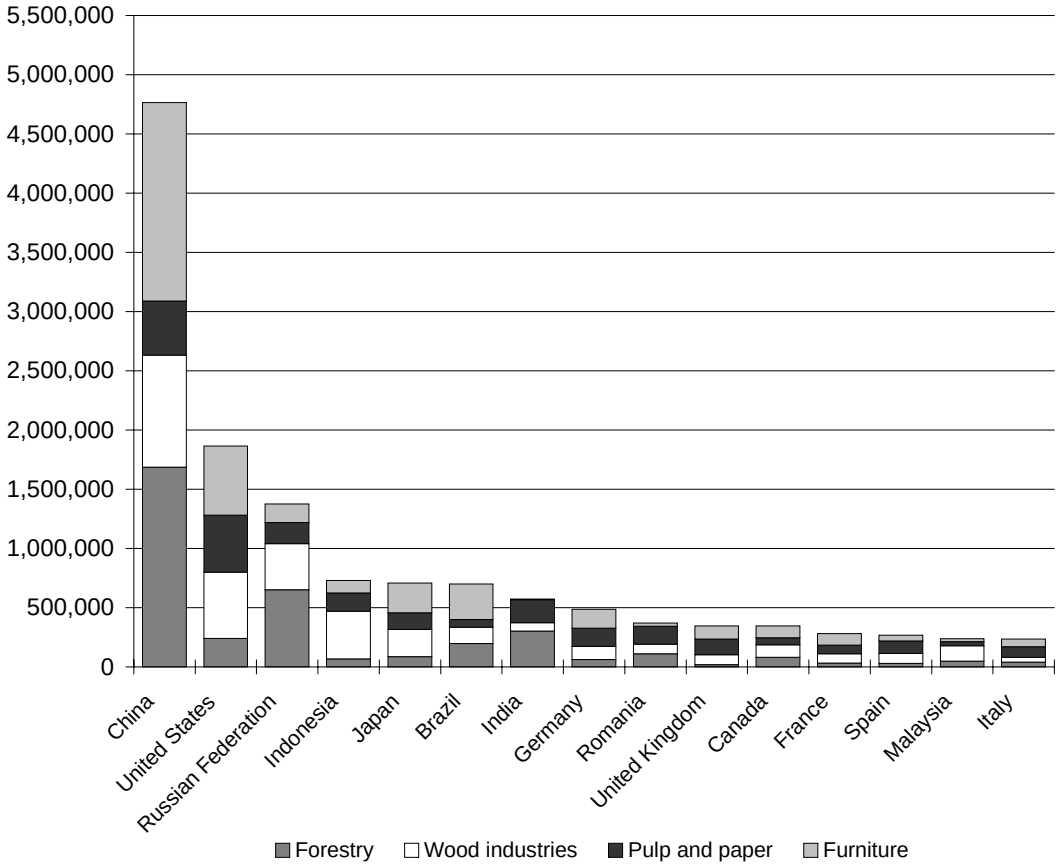
Even with the above caveat, available data are obviously inadequate in many cases. For example, India, a country of 1 billion inhabitants, records only 7,000 workers employed in furniture making in the UNIDO database. The true number must be several hundred thousand. As for forestry, estimates had to be used even for some industrialized countries.

Informal sector and subsistence employment figures are mere "guesstimates" and should be treated as such (for a fuller discussion of this aspect see Poschen, 1997). The estimates were made in 1997 in an attempt to get a sense of likely orders of magnitude, but lay no claim to absolute accuracy. The numbers presented below cannot therefore meaningfully be compared with those published in 1997 in search of trends. They are simply meant to provide the best "snapshot" possible.

With all the above reservations, it would appear that global total forest industries employment is around 47 million. Formal sector employment is more than 17 million. This is set to decline by almost 1 million over the coming years because of the combined effect of restructuring and restrictions on forest harvesting introduced in China (*China Green Times*, 8 December 2000). Informal and subsistence employment is much higher. It is very tentatively estimated to be around 30 million, but could well be double that of the formal sector.

The top 15 countries by formal forest industry employment are shown in figure 5.2. It includes five developing countries and two countries in transition. As has been noted above, India would rank higher if a more realistic number for furniture making was available.

Figure 5.2. Employment in the forest industries: Top 15 countries (late 1990s)



Source: Compiled from various national statistics.

Trends in forestry sector employment

As explained above, a discussion on employment trends cannot be based on global data. Instead, table 5.2 has been compiled for 21 countries for which full data sets were available. They include most major producer countries. Ten of the countries are industrialized, 11 are developing or countries in transition to market economies. The sample size is limited but appears sufficient to allow a number of conclusions to be drawn.

Employment has been falling in all industrialized countries except the United States. In all these countries, the output of the forest industries has increased over the same period, but it has largely been jobless growth. Fuelled by its exceptional boom throughout the decade, United States production of wood products and furniture, though not of paper, has risen even faster than productivity, creating additional jobs. The overall fall has been most pronounced in the technically most advanced producer countries in northern Europe.

Table 5.2. Employment trends based on available statistics for 21 countries

Country	Period	Forestry	Wood	Furniture	Paper	Total
Austria	1990-98	↘	↘↘	↗	↘↘	↘
Canada	1990-98	n.a.	↗	↘	↘	↘
Finland	1990-98	↘↘	↘↘	↘	↘↘	↘↘
France	1995-98	↘↘	→	↘	↘↘	↘
Germany	1991-98	↘↘ *	↘↘	↘	n.a.	↘
Japan	1990-98	↘↘ *	↘↘	↘↘	→	↘
New Zealand	1990-97	↘↘ *	↗↗	→	→	↘↘
Sweden	1990-98	↘↘	↘↘	→	↘↘	↘↘
United Kingdom	1990-98	↘↘	↗	↗↗	↘↘	↘↘
United States	1991-2000	↘	↗↗	↗↗	↘	↗
Brazil	1990-95	n.a.	↘↘	↘↘	↘↘	↘↘
Chile	1990-98	→	↗ (→)	↗ (↘)	↗↗ (→)	↗ (→)
China	1990-97	n.a.	↗↗	↗↗	↗↗	↗↗
Côte d'Ivoire	1995-97	n.a.	↗↗	n.a.	↘↘	↗
Indonesia	1990-96/97	n.a.	↗↗	↗↗	↗↗	↗↗
India	1990-98	n.a.	↗↗	↗↗	↗↗	↗↗
Malaysia	1990-97	n.a.	↗↗	↗↗	↗↗	↗↗
South Africa	1990-96	n.a.	↗↗	↗↗	→	↗
Philippines	1990-97	n.a.	↘↘	↘↘	↗↗	↘↘
Romania	1990-98	→	↘	↘↘	↘	↘↘
Russian Federation	1990-98	↘↘	↘↘	↘↘	↘↘	↘↘

Note: n.a. = not available.
Legend: Change > +/- 2% = up/down: ↗/↘
Change < 2% = stable: →
Change > +/- 10% = strong up/down: ↗↗/↘↘

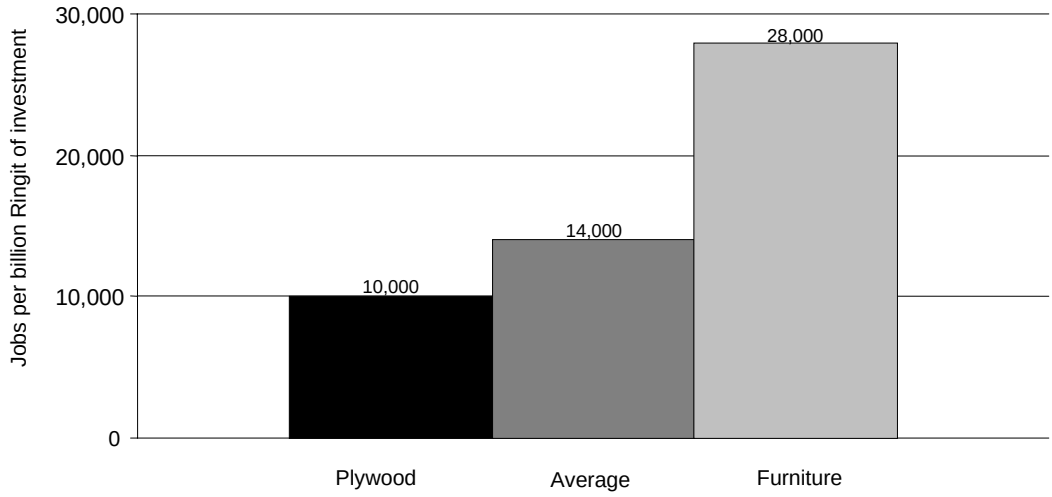
Forestry employment has fallen in all countries for which data were available. Even in the United States, the slowing of the economy in 2000 was enough to cause a fall in logging employment. Other subsectors have not followed the same pattern, either across or within countries. Some have maintained employment levels despite an overall fall such as the wood industries in France or the paper industry in Japan. Others have even managed to grow against the general trend, such as the wood industries in Canada and New Zealand or furniture makers in Austria and the United Kingdom.

The two countries in transition, Romania and the Russian Federation, have been grappling with major economic and political crises. Production and exports in the Russian Federation have slumped to levels around those of the 1940s. Export markets absorbing 80 per cent of Romania's furniture production to some extent cushioned the collapse of domestic markets (*Holz-Zentralblatt*, 8 November 1999). In both countries, the restructuring and privatization of enterprises led to massive shedding of surplus workers in overstaffed, formerly state-owned firms. In the Russian Federation more than a million jobs were lost between 1990 and 1999

(Petrov, 2000, and UNIDO, 2000, for furniture). Particularly in remote areas with an economic monoculture based on forest industries, those redundancies have already caused high levels of unemployment. More hardship may be yet to come. Surveys of Russian forestry firms show that production fell much more than employment levels, suggesting that firms today are more overstaffed than under the centrally planned economy (Carlsson et al., 2000).

In most developing countries, by contrast, the forest industries have been dynamic creators of jobs. The decline in Brazil is in all probability a result of the economic turbulence in the first half of the 1990s to which the data relate. The Philippines is suffering from the deforestation of the last four decades. Only the paper industry which relies on plantation timber has created additional employment. All other countries have seen an expansion of employment across all subsectors. In Malaysia FDI contributed very significantly to job creation, particularly in the furniture sector, where investment required per job is much lower, as can be seen in figure 5.3.

Figure 5.3. Average investment per forest industry workplace in Malaysia (mid-1990s)
('000 jobs/billion ringgit)



Source: Ho et al., 2001.

It has been observed that some of the apparent drop in employment according to conventional ISIC categories may be due to "statistical drift" from manufacturing to services because of a change in status (NRRC, 1997). Truck drivers hauling timber for a sawmill, for example, will be counted as wood industry employees as long as they are on the sawmill's payroll. When trucking is outsourced to a contractor whose main business is transport, these jobs disappear from the forest industries specific ISIC statistics and are merged with general transport. We believe this to be a contributing factor in some countries included in the table, such as Brazil, where outsourcing became widespread only in the early 1990s. In most others, outsourcing either predated the period under consideration or was still rare, and is thus unlikely to affect the basic findings.

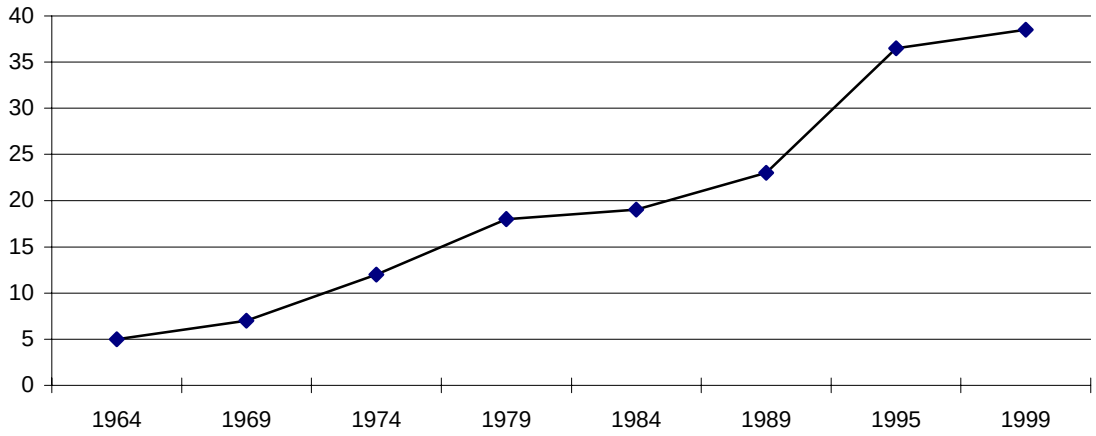
What then causes the big difference between employment trends in developing and industrialized countries? Do they follow different rules or is it the same fundamental equation yielding different results because of the current values of the variables in it? The following will argue that the latter is the case.

Output, productivity and employment in the forest industries

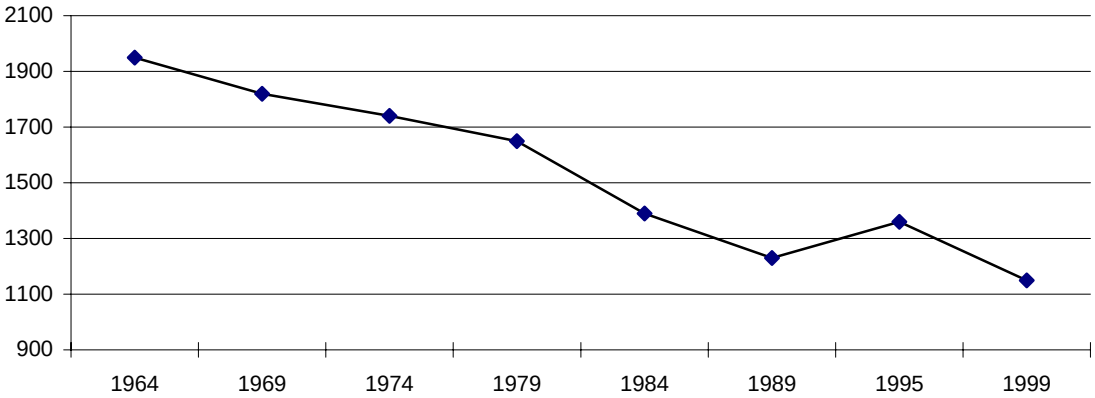
Figure 5.4 below is based on a long time-series of several important variables for the German living-room furniture sector. An analysis of the relationship between these variables over time offers important insights into the dynamics of employment in the forest industries as a whole.

Figure 5.4. German living-room furniture industry: Trends 1964-99

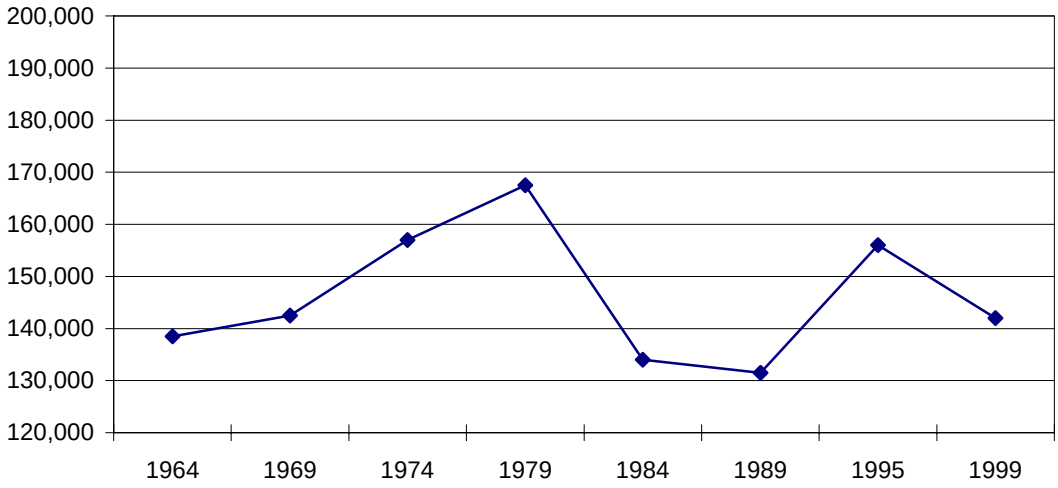
(a) Turnover trends (billion DM)



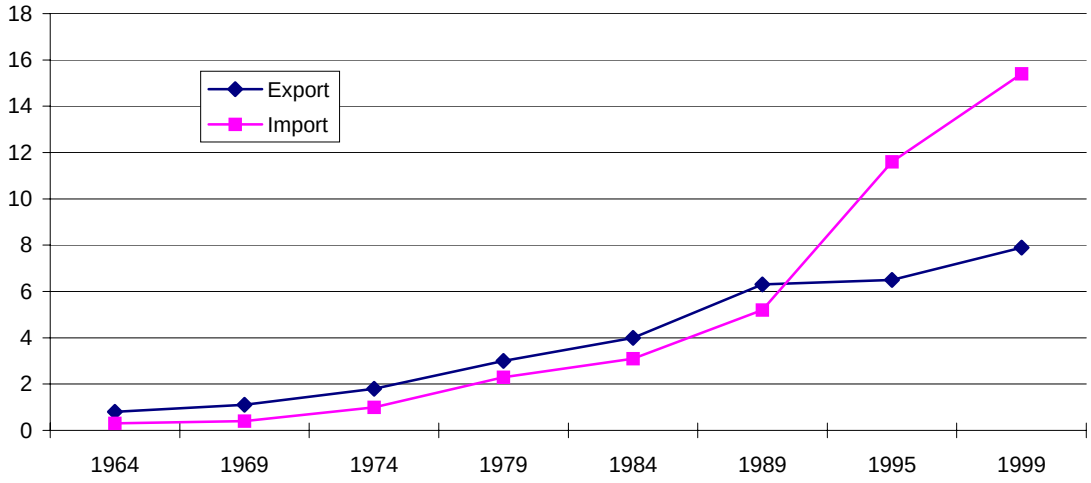
(b) Trends in the number of firms



(c) Employment trends



(d) International trade (billion DM)



Source: HDH/VDM, 2000.

The following overall trends can be identified:

- *Before 1980.* In an early phase, production rises by more than one-third and employment by one-quarter. Exports and imports are modest and grow slowly. The number of firms declines by some 15 per cent.

- *1979-84.* Production almost stagnates, triggering a steep fall of almost one-third in employment and accelerating the disappearance of firms. Exports account for almost all of the increase in production, but develop in parallel with imports and the trade balance remains positive.

- *1985-89.* Output expands more rapidly again, not least thanks to exports. The decline in the number of firms and of jobs slows down.

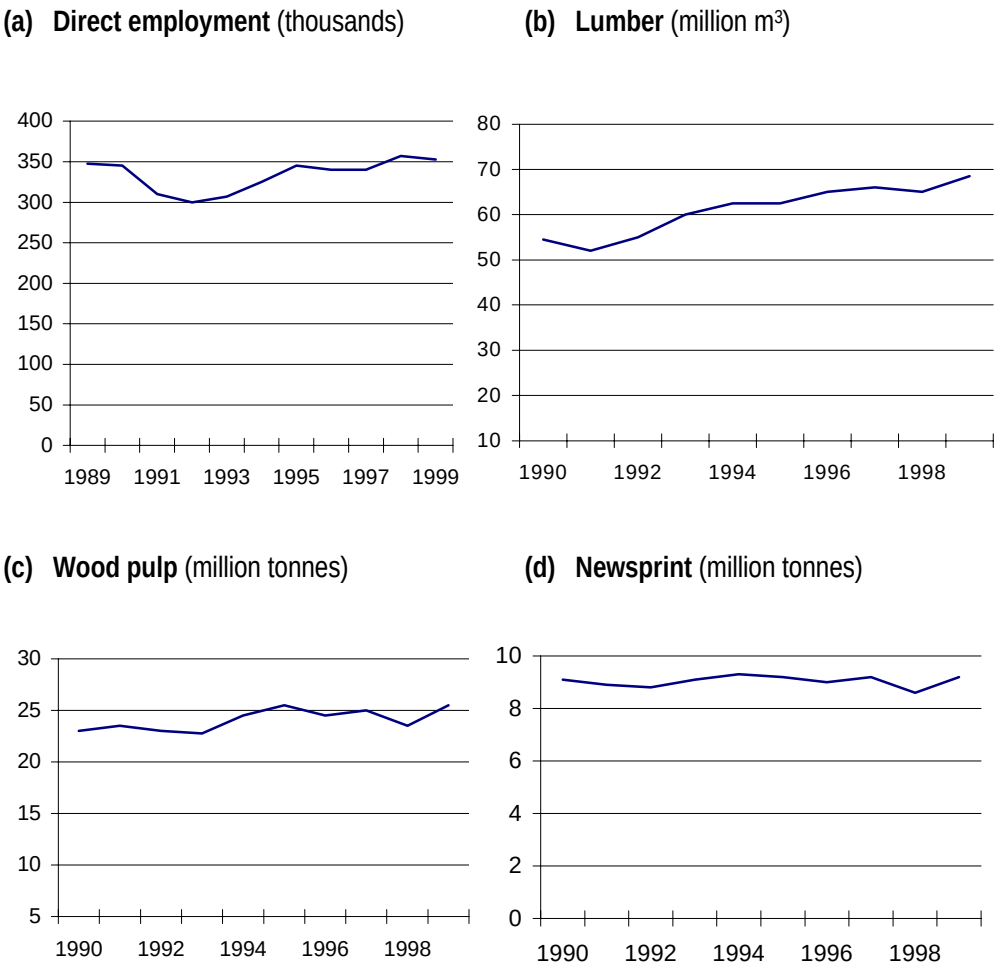
- *1990-95*. Reunification provides a strong stimulus for production, but also for imports which exceed exports for the first time. The number of firms and of workers shows a "hump" caused by the additional enterprises in eastern Germany.

- *1995-99*. Another period of sluggish, largely export-led growth, with a widening trade deficit. The number of firms and of jobs contracts strongly.

This time-series illustrates that growth needs to be substantive if it is to maintain or expand employment levels and that downturns provoke deep cuts in the workforce. These cuts typically also represent strong hikes in productivity. The pressure from imports can rise sharply and seriously curtail market share and growth prospects for domestic producers.

Similar dynamics are reflected in figure 5.5 for the Canadian forest industries, with a contraction of over 10 per cent due to flat sales of paper and a decline in lumber production, followed by buoyant growth during the remainder of the 1990s, when a 20 per cent rise in lumber production led in 1999 to a recovery of 1989 employment levels (Natural Resources Canada, 2000).

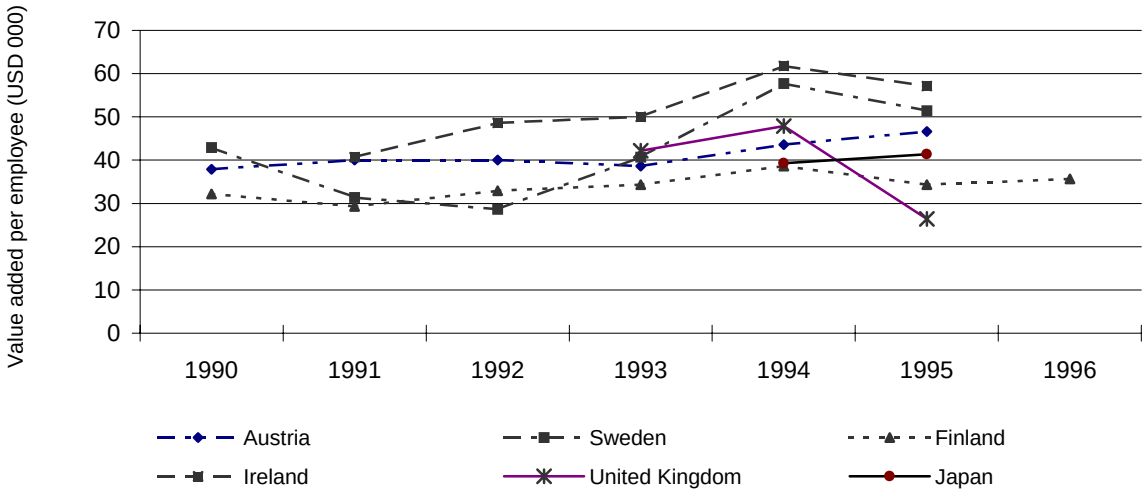
Figure 5.5. Forestry sector in Canada, 1989-99



Source: Natural Resources Canada, 2000.

The key factor linking output and employment levels is labour productivity. There are big differences in productivity within and between countries. Figure 5.6 illustrates this for productivity in sawmilling.

Figure 5.6. Productivity in sawmilling and wood planing (European Union and Japan)



Source: OECD, cited by Hazley, 2000.

In all regions and sectors, labour productivity has been on the upswing, in many cases at rates that exceed productivity growth in other manufacturing sectors and in the economy as a whole. Some examples:

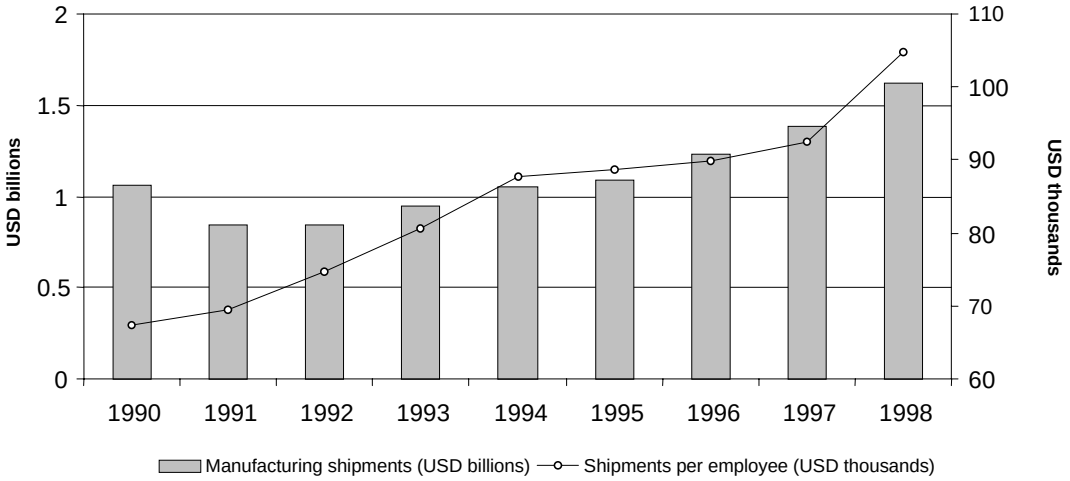
- labour productivity in European Union wood processing increased 40 per cent faster than in other manufacturing industries (EU, 1997);
- between 1960 and 1997, labour productivity in Austrian sawmills rose from five work-hours to 17 minutes per m^3, i.e. 5,880 m^3 per worker per year (Jechart, 1997);
- in Italian furniture making the rise between 1990 and 2000 was 25 per cent in real terms;
- furniture makers in the Czech Republic increased value added per employee by 5.4 per cent per year between 1993 and 1997 (Pössl, 1999);
- in Canada, gross labour productivity rose 4.6 per cent per year from 1990-1998. The equivalent figure for the United States is a staggering 9.7 per cent, as shown in figures 5.7(a) and 5.7(b) below;
- labour productivity in paper making in New Zealand rose from 60 tons/worker in 1987 to 105 tons in 1997 (MAF, 2001);
- Malaysia recorded productivity increases of 20 per cent or more in some subsectors between 1995 and 1997, which is comparable to the rises achieved for manufacturing as a whole (Ho et al., 2001).

These productivity gains compare very favourably with the 1-2 per cent annual increase in total factor productivity achieved in the general economy in

industrialized countries over the last decade. Only Finland recorded a rise of almost 4 per cent/year from 1991 to 1995 (*Financial Times*, 31 January 2001).

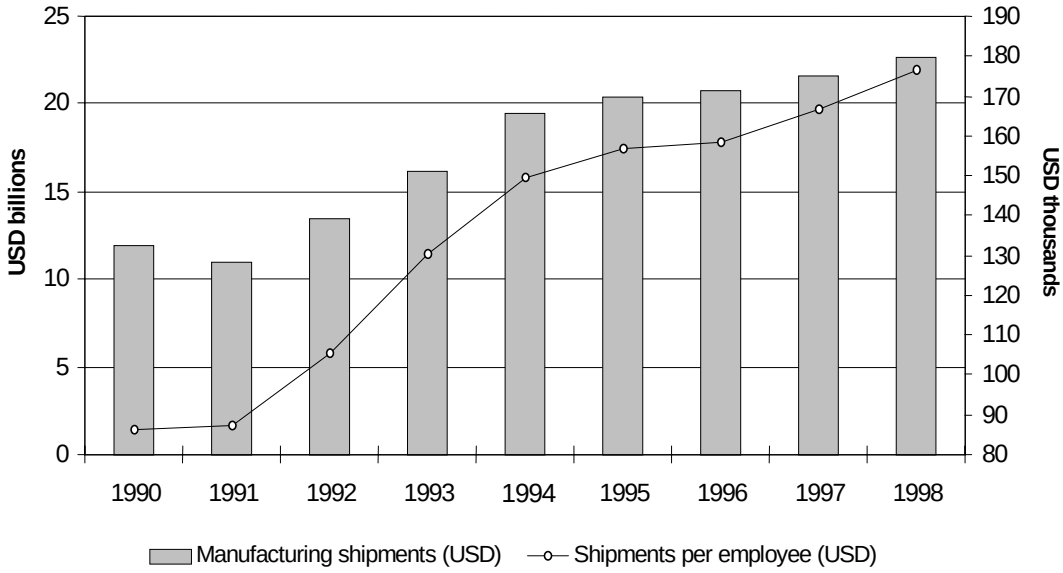
Figure 5.7. Total manufacturing shipments and shipments per employee (wooden furniture) in Canada and the United States, 1990-98

(a) Canada



Source: Statistics Canada and Industry Canada.

(b) United States



Source: United States Department of Commerce.

This surge in productivity is the result of advanced technology and, in some cases, also of new forms of work organization; the capacity to introduce both rises with the size of the firm. Structural change towards bigger firms will have repercussions for employment. "Specific" employment is far higher in smaller enterprises. While both account for about one-third of turnover, European wood

industries firms with fewer than 20 employees provide more than half of all jobs, against 24 per cent in firms with more than 100 employees (EU, 1997). Bigger firms are much more likely to substitute capital for labour, though they do not necessarily achieve higher overall productivity. FDI acts as a powerful mechanism for technology transfer and can make big contributions to gains.

Technology, structural change, FDI and productivity

There have been significant advances in technologies applied in the forest industries over the last several decades. Björn Hägglund, chairperson of the Swedish Forest Industries Federation, summarizes the present state in the following terms:

> Today's most advanced and large-scale applications of information technology are found in forestry, in sawmills and in the paper manufacturing process. A modern paper machine comprises a minimum of 150 computerized systems. (*Skogsindustrierna*, special EU edition, 2001.)

This is certainly a fair statement about Mr. Hägglund's own company and about most larger Scandinavian firms. In other regions and in smaller firms, technology has been introduced much more slowly.

There has in fact not been much in the way of radically new technology in the last decade. Tree harvesters and forwarders have basically not changed since the early 1990s. Advanced pulp and paper mills, with their computerized "real-time" controls of most production parameters, have been close to being "unmanned factories" for quite some time. In sawmilling, log scanning and computerized scheduling, multiple circular saws and edgers for the processing of small dimension logs were introduced in the 1980s. The same is true for computer-aided design (CAD) and computer-aided manufacturing (CAM), with computer-numerically controlled (CNC) machines and automated coating in wood products and furniture manufacturing. Most of these technologies have merely been improved further through the incorporation of information technology as a way of linking different machines and production stages.

The strong impact these technologies are now having on employment in a growing number of countries and subsectors is the result of a much wider and deeper penetration. In the European Union, small firms started to adopt advanced equipment in the mid 1990s (EU, 1997). Investment in replacements and upgrading is making these technologies the industry standard. The trend is furthered by increasing specialization, allowing firms to run bigger batches of products on fewer but better-equipped lines. Big gains have also been made by using the same hardware differently. An example is the organization of forest machine operators into autonomous teams in Sweden. In some cases productivity doubled without any modification of the equipment as such.

The spread of technology is helped by the fact that very little of it is developed by the forest industry itself and is thus not proprietary. Most research and development for the forest industries is done by the specialized equipment manufacturers. Mergers and acquisitions among them, like the one between Rauma

and Valmet in Finland, have left a relatively small number of manufacturers operating worldwide. Three manufacturers dominate the market for paper machines. There is a handful of big suppliers of forest machines. Producers of woodworking machinery from Italy and Germany share more than half the world market. The engineering firms involved in the design of major new facilities also operate worldwide. As a result, state-of-the art technology is available everywhere.

FDI speeds up the dissemination of advanced equipment and methods. The highest productivity in sawmilling (figure 5.6 above) is found in Ireland, which outperforms even the Scandinavian countries which might be expected to be in the vanguard in terms of performance. What comes as a surprise at first sight is in fact the result of FDI, not least by Scandinavian firms, attracted by government incentives (Hazley, 2000). According to the chairperson of SAPPI the possibility of transferring technology is one of the biggest advantages enjoyed by a global firm (*Financial Times*, 8 December 1997).

In developing countries and countries in transition, the interest in cooperation with foreign firms is often prompted by lack of capital. Along with capital, foreign companies bring new technologies and work methods, as experienced in the Polish furniture industry over the last decade. The result can be "the best of both worlds" for the investor: a combination of low labour costs and higher quality and productivity resulting from modern equipment. IKEA has been successfully practising this business model since the 1960s in Eastern Europe, but increasingly also in Asia. It is the combination of low cost and high qualifications that makes Eastern European wood products and furniture major competitors for firms in the European Union (EU, 1999).

In some cases, the manufacturers themselves run advanced equipment for clients in developing countries. One example of this is a German-built solid wood-panel mill recently established in China. The machine manufacturer delivers and operates the state-of-the art, largely automated mill and exports the produce to European furniture manufacturers. A second machine was delivered shortly after the first and a parquet manufacturing plant operated under the same modus is planned (*Holz-Zentralblatt*, 30 April 1999).

Big firms in developing countries can do without this sort of assistance. They master the most advanced technology even without FDI. The pulp mills of Klabin or Aracruz in Brazil, or the MASISA wood-panel mills in Chile, are industry standard. It is telling that the biggest single order ever received by the Swedish manufacturer PARTEK was placed by Aracruz of Brazil: 58 modern tree harvesters and 27 forwarders worth US$24 million (*Holz-Zentralblatt*, 18 December 2000). The fully mechanized harvesting teams of Aracruz have average productivity of 120,000 m^3 per year per harvester, in admittedly very easy terrain and stand conditions. In a humid tropical climate, productivity and cost is monitored in real time by computers mounted on the harvester transmitting the information continuously to air-conditioned cubicles, where foremen and mechanics coordinate and monitor the operation. In Chilean firms, harvesters also produce up to 120,000 m^3 per year (INFOR, 1998).

The basic mechanism at work could be schematically summarized as follows:

→ Growing firm size

→ Advanced technology

→ Rising productivity

→ Falling employment per unit product

Gradual versus disruptive change

This sequence of causes and effects would be found even in a totally closed economy. Its impact is boosted by globalization to varying degrees. Depending on the context in which this mechanism operates and on the influence of additional factors, it can result in gradual or sudden, even disruptive change. Two situations of gradual change are the following:

(1) Gradual change in developing countries and economies in transition:

Multinational and transnational companies

→ Advanced technology to developing countries and economies in transition

→ Products enter international trade

→ Increase in production volumes beyond national consumption

→ Increase in employment for a given productivity level

(2) Gradual change in industrialized countries:

Multinational and transnational companies

→ Absolute or relative divestment in industrialized countries

→ Increasing imports

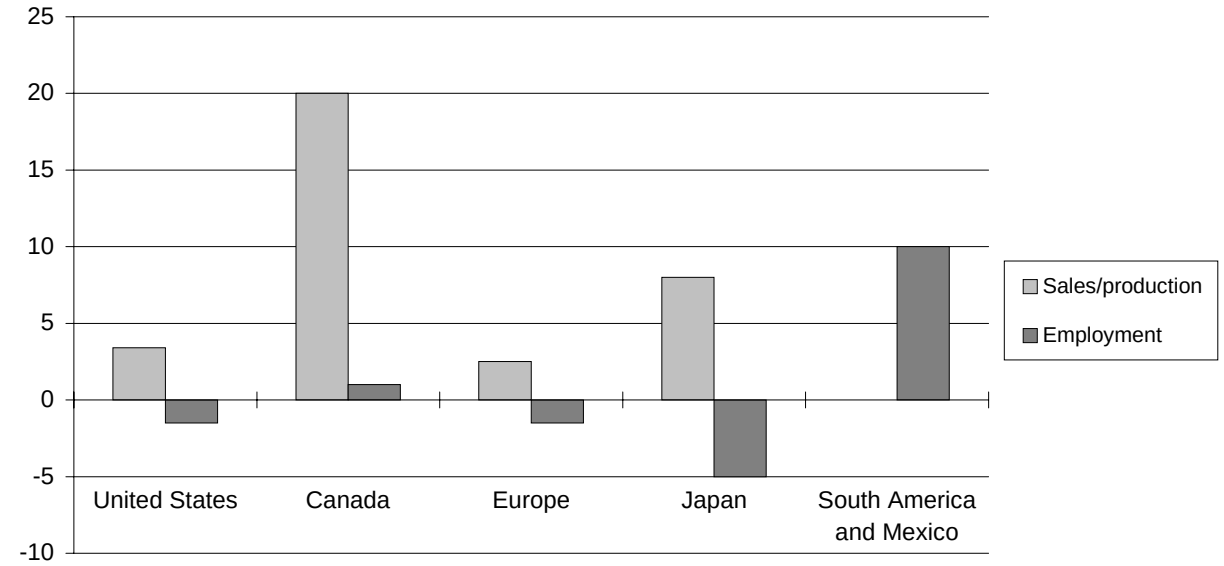
→ Decrease in production volumes below national consumption

→ Loss in employment

These two patterns match the trends actually found in employment in industrialized and developing countries. Based on the PriceWaterhouseCoopers *Global forest and paper industry survey* (2000), the effect on industrialized countries is depicted in figure 5.8 below.

From the figure below it would appear that growth in output of 3 per cent or more is needed in order to maintain or generate employment. The forecasts cited in Chapter 2 suggest that such growth rates are unlikely in the above regions for the next decade. This would point to the same conclusion that was reached in a recent study in France: even assuming that the economic climate remains favourable, employment in the forest industries will at best be maintained at current levels (Lochu, 2001).

Figure 5.8. Growth in sales/production versus employment (%)



Source: PriceWaterhouseCoopers, 2000.

For some subsectors the prospects are even less encouraging. For example, the labour-intensive "miscellaneous wood products" industry, which contributes almost 20 per cent to wood industry employment in the European Union, has so far failed to improve productivity and is exposed to massive competition from Eastern Europe and Asia (EU, 1997). Labour-intensive furniture like upholstery is also increasingly manufactured in Eastern Europe.

Some developing regions and Eastern Europe have been the "mirror image" of these trends over the last decade, with net gains in employment. Unfortunately, there are some dark clouds on an otherwise bright horizon for developing countries:

- Chile is the country where employment creation has been slowest. Very substantial increases in output have barely translated into new jobs.
- In Malaysia, as in Poland, there are signs of strong competition from even lower cost countries which will probably affect employment in the furniture sector.
- Employment data for China do not yet include the impact of the recently introduced restrictions on forest harvesting which will lead to huge redundancies.
- The forest industry in Indonesia is up against a massive raw material deficit that has already led to mill closures and lay-offs in some sectors.
- In a number of countries, the rapid growth of forest industries has met with a hostile reception by local populations.

The record of some developing countries and economies in transition suggests that there too productivity is rising quickly. While the threshold for growth in output, which must be surpassed if employment is to be maintained or expanded, is

generally lower than in industrialized countries, productivity is acting as a buffer and can lead to stagnation, as in Chile, or even temporary decline, as in Brazil. Another observed impact of the combination of firm size and export-orientation is that of massive competition during downturns. In Chile, export-oriented large firms saturated the national markets for sawnwood during the Asian crisis, when large volumes could not be off-loaded to their normal destinations abroad. Moreover, trends in countries like Poland, the Czech Republic and Malaysia are such that competition with even lower cost producers in neighbouring countries forces firms to upgrade productivity and quality in order to remain competitive, reducing the employment potential in the sector.

Of particular concern are two rather opposing cases of sudden or disruptive change in the forest industries. One is a very rapid expansion of the forest industry, a case that will be discussed under "rights at work" below. The other is a sudden raw materials crunch which can affect local or even national economies. The raw materials shortage can be due to past overexploitation or to harvesting restrictions, as discussed earlier. Schematically, the case can be represented as follows:

Logging bans/harvesting restrictions/exhaustion of raw material sources
→ Rapid decline in production
→ Massive redundancy

Such situations have arisen in both industrialized and developing countries, notably in Asia (see box on logging bans in Chapter 6). The impact on employment can be substantial. For example:

- In the United States, trade unions worry that the ban on road building in public forests is driving jobs offshore. Quoting information provided by the administration they claim that the measure will cost up to 12,000 jobs (*The PACEsetter*, November 1999).

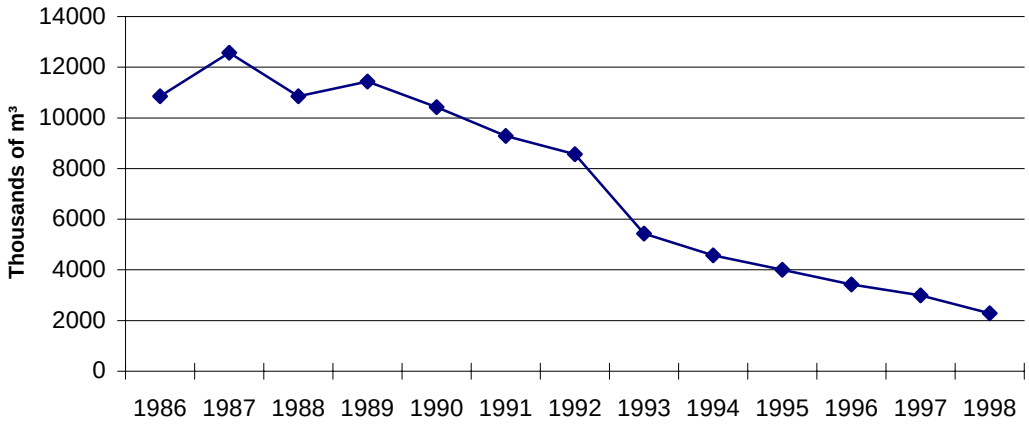
- The restrictions on harvesting in China will affect more than 1.2 million forest workers. More than 900,000 workers will lose their jobs (*China Green Times*, 8 December 2000).

- Closures of plywood mills in Indonesia due to raw material shortages have so far cost more than 40,000 jobs (Erwidodo et al., 2001).

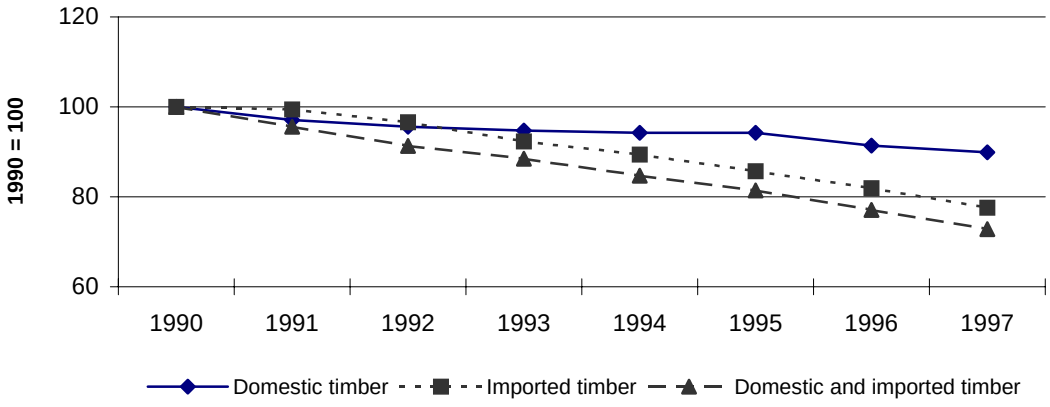
Sudden changes in raw material availability can also have repercussions on employment beyond a country's borders. Restrictions on log exports in Indonesia, the United States and Malaysia led to a sharp decline in the number of sawmills and a rise in manufactured imports in Japan during the 1990s, as can be seen in figures 5.9(a), (b) and (c) below.

Figure 5.9. Japan: Reduction in availability of imported roundwood and number of sawmills

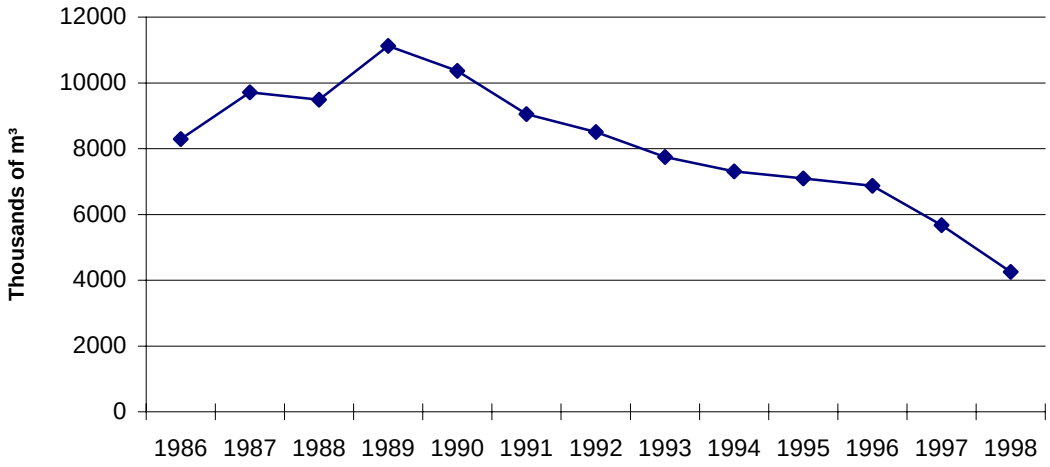
(a) Raw log imports from Malaysia



(b) Number of sawmills by type of timber consumption



(c) Raw log imports from the United States



Source: Fujiwara et al., 2001.

There is no doubt that globalization is a powerful force. Firms and even entire countries appear to be at the receiving end of it. Nevertheless, there is evidence that some firms and countries have been faring much better than others. Several studies of European wood and furniture industries demonstrate that the performance of countries and firms in production and exports, and by extension in employment creation or job stability, is individual. For furniture, Kaplinsky and Readman (2000) conclude that the outcome is a function of the firms capabilities and government policies.

Denmark is an example of a high-cost country that has remained successful in a low-tech industry like furniture making. Industry structure has essentially been stable for the last 25 years. Firms have not resorted to economies of scale, they use the same technology as their competitors and hold no copyrights. The key in this case has been cooperation between specialized contractors/suppliers, as well as close interaction with customers at all stages of design and manufacturing.

Looking at the European wood industries as a whole, there is a dualism between companies doing well during general downturns and those with high mortality. The latter are not necessarily the small and medium-sized firms (EU, 1997).

To summarize

Productivity increases in the forest industries have been substantial in most countries over the last decade, often outpacing the general economy and the average for the manufacturing sector as a whole. Globalization has further fuelled productivity gains by accelerating structural and technological change. FDI and international outsourcing have become an important push factor in developing countries and economies in transition.

In the industrialized countries, high productivity increases and modest growth in production have resulted in declining employment. Competition from imports has increasingly been adding to the pressure. Some of these imports are the result of relocation of capacity from the importing country. The continuing shift of investment to expansion abroad and rationalization at home should further accelerate the decline in employment.

A number of developing countries in Asia and Latin America have been beneficiaries of FDI and expanding export markets. Employment has increased, in certain cases rapidly, and should continue to do so in the medium term. Competition among low-cost countries is mounting, however, and will force increases in productivity and quality, thereby slowing or reversing job creation in the forest industries. With the exception of South Africa, African countries have not been able to capitalize on their resource potential.

In a number of countries, both industrialized and developing, raw material shortages caused by overexploitation or restrictions for reasons of conservation have forced the closure of mills. In some cases this has led to sudden redundancies on a massive scale.

While common principles and mechanisms are found across firms, subsectors and countries, performance varies widely among these. Some have done well, apparently against the odds, while others have failed to thrive under what should have been favourable circumstances. The impact of globalization is to a large degree conditioned by the reaction of firms and governments.

5.2. Quality of employment and job security

The quality of employment will be discussed here from the perspective of income, working conditions, safety and health and, in particular, employment stability.

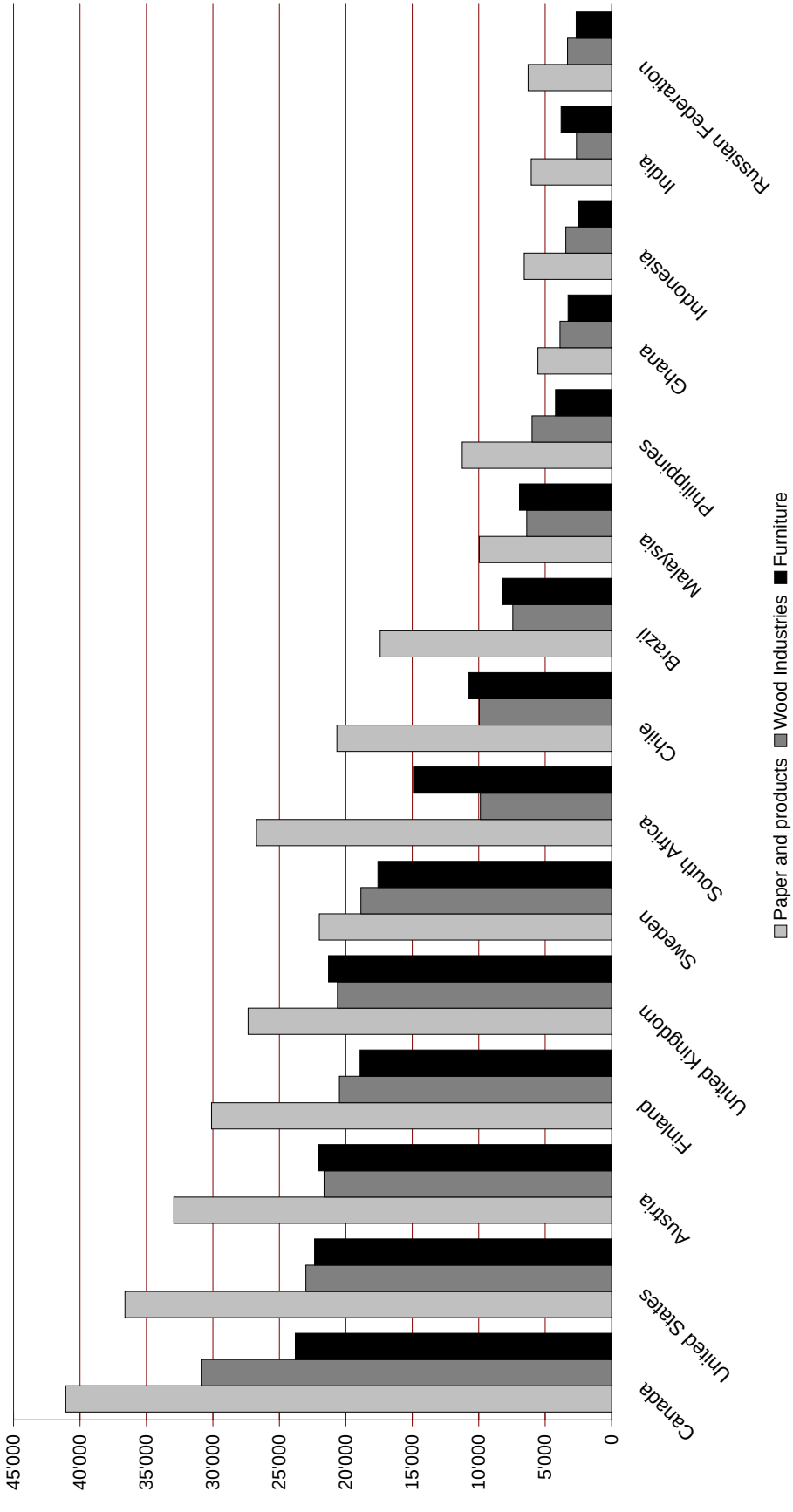
Wages and incomes

While the volume of employment offered by a sector is the main determinant for the number of people benefiting economically from its activity, the level of wages largely determines the extent to which they actually benefit. As was to be expected, levels vary widely across countries and subsectors of the forest industries. Figure 5.10 below shows annual wages for selected countries in 1998 in US dollars. Wages represent industry averages that have been converted using purchasing power parities to eliminate the influence of fluctuating exchange rates. The range is from about US$2,500 for a wood industries worker in India to more than US$41,000 for the average Canadian paper maker. Overall, wages correlate with GNP per capita. While the Canadian wage may be close to the highest existing wage, much lower wages are found in some countries not included in the figure.

The differences do not merely reflect the varying composition of the workforce, such as a higher proportion of skilled workers in industrialized countries. A comparison of wages for loggers, i.e. within the same occupation, based on the ILO *October Inquiry*, and depicted in figure 5.11 shows a similar picture.

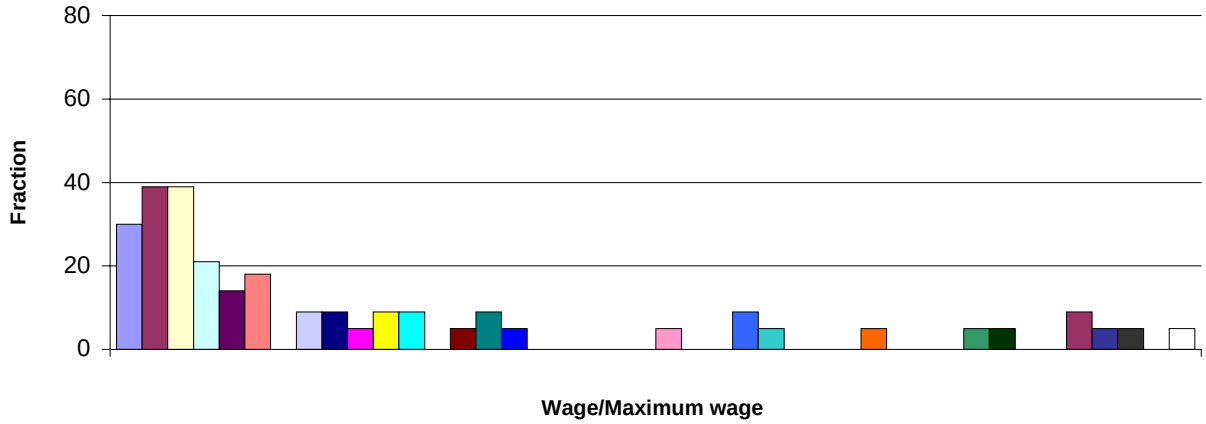
The general conclusions drawn by Freeman and Oostendorp (2000) from their analysis of wages in all kinds of occupations around the world also appear to hold for the forest industries: differences in wages for the same occupation between countries are greater than those between occupations within a given country. The gap between wages in industrialized and developing countries for the same occupation increased during the 1980s and 1990s in spite of world trade. The authors did not find any relationship between the degree of integration of a country into world trade and its wage structure and concluded that other factors must have had a stronger influence. According to their analysis, the principle forces in wage setting are the country's GDP and the influence of trade unions and/or wage-setting institutions.

Figure 5.10. **Annual average wages in wood products, wooden furniture and pulp and paper manufacturing in selected countries in 1998 (1995 for Brazil and the Russian Federation) (US dollars, based on purchasing power parities)**



Source: Based on data in UNIDO, 2000.

Figure 5.11. Variation in wages around the world in logging, 1983-98



Source: Freeman and Oostendorp, 2000.

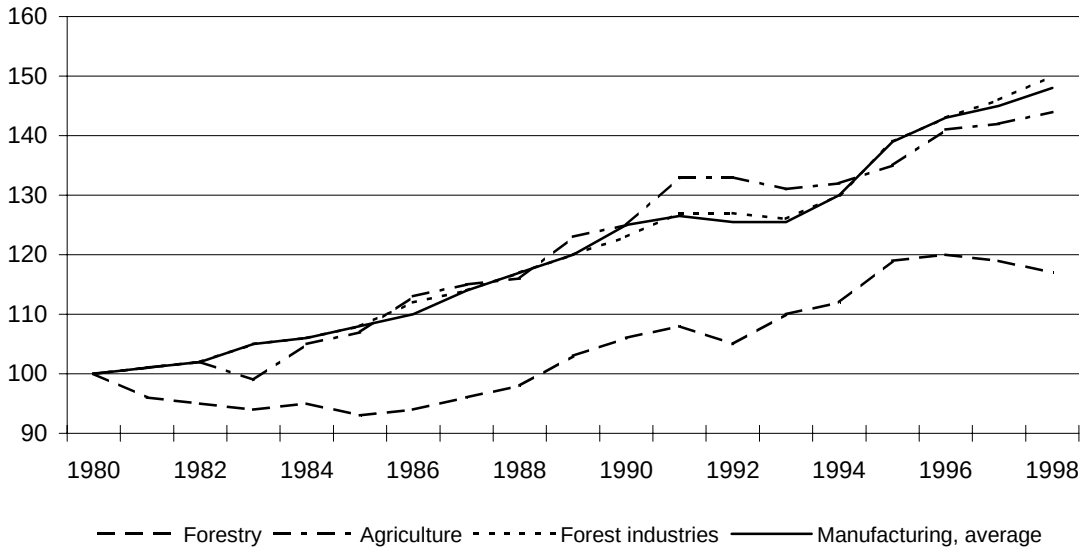
As can also be observed in figure 5.10 above, wage differentials between the various subsectors are significant. In all countries, pulp and paper wages are the highest, often head and shoulders above the others. For the remainder, the order differs from country to country, but wood industries are often second and furniture tends to have the lowest wages. General forestry wages can be very low, but logging wages are comparatively high in countries where the work is very heavy or where advanced equipment is being used.

The pulp and paper industry is a good comparator because it tends to be at or above average manufacturing wages. Where the gap is significant, the other sectors may be unattractive relative to other industries. As figure 5.12(a) shows, earnings in the forest industries in Finland have followed those in general manufacturing very closely (Pajuoja, 2000). In Japan, the wage gap between wood and furniture narrowed relative to the industry average, but remuneration still remains 15 per cent lower (Fujiwara et al., 2001). In Malaysia, however, wages have not been keeping up with those in other sectors, contributing to the difficulties of attracting workers in a tight labour market (Ho et al., 2001). At around US$65, net monthly wages in the Romanian wood processing and furniture making sectors are among the lowest in a country where the industrial average is less than US$100 (2.3 million lei). Moreover, these low wages have not kept up with inflation (*Holz-Zentralblatt*, 27 November 2000).

In many developing countries, wages in forestry, but also in other forest industry occupations, are at or close to the minimum wage. This is the case with forest workers in Brazil, for most workers in the industry in Côte d'Ivoire (Gnabeli, 2001), and for all workers in Indonesia except those in the pulp and paper industry. The minimum wage often trails the development of average wages and, more importantly, of prices. In Indonesia, for example, this has given rise to intense disputes over adjustments (Erwidodo et al., 2000).

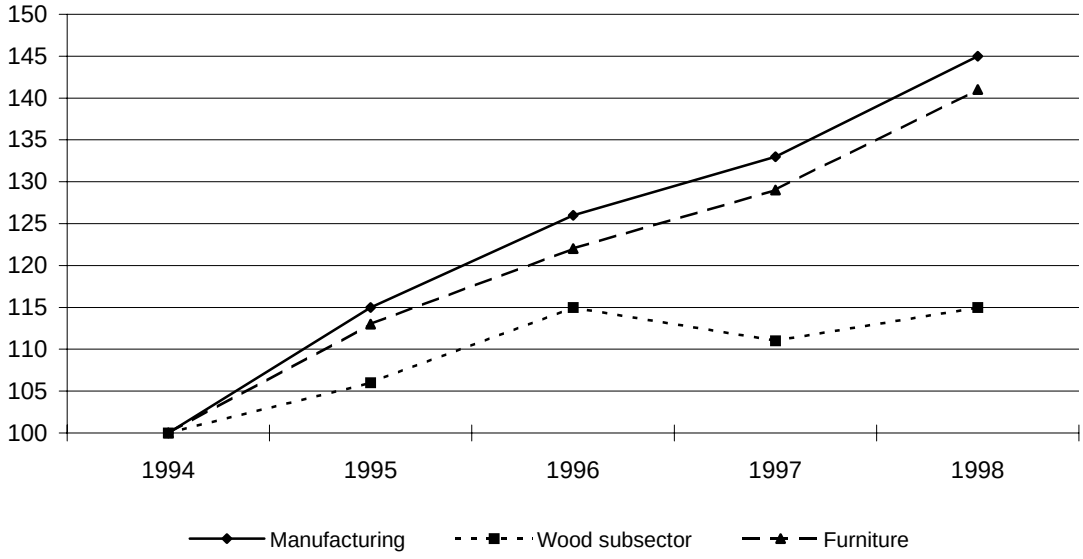
Figure 5.12. Development of forest industry earnings relative to manufacturing average

(a) Finland (1980 = 100)



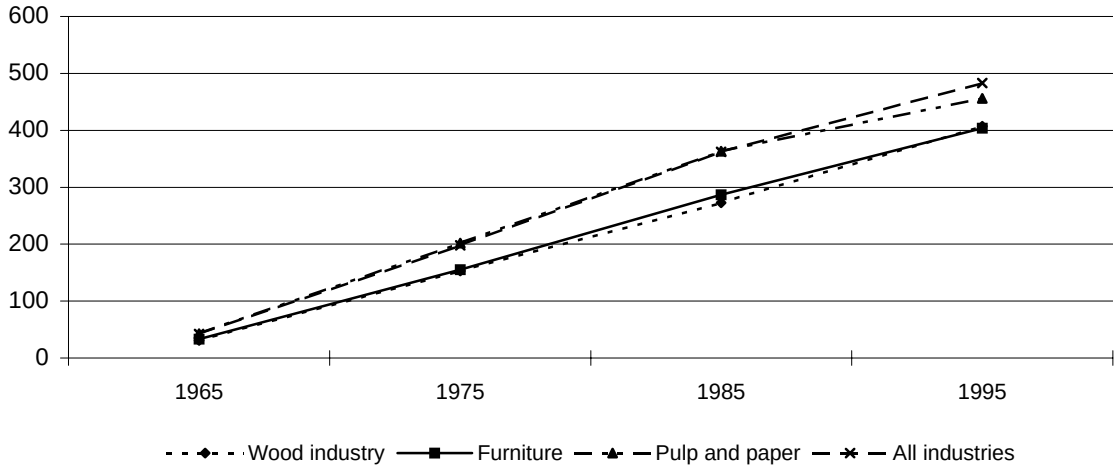
Source: Pajuoja, 2000.

(b) Malaysia (1994 = 100)



Source: Ho et al., 2001.

(c) Japan ('000 yen)



Source: Fujiwara et al., 2001.

FDI is accompanied by the posting of expatriate staff in many countries. This can be a source of wage disparity and friction with local staff. In Côte d'Ivoire, expatriates account for a quarter of the payroll, even though they make up only 2 per cent of the workforce, causing resentment among national staff (Gnabeli, 2001). A high proportion of expatriates and large differences in pay can significantly erode the contribution of the industry to the economic development of a country. In order to avoid a drain of forest industry revenue through expatriate salaries and to foster self-reliance, Indonesia has made training for handing over of technical and managerial positions mandatory for foreign investors (Erwidodo et al., 2000).

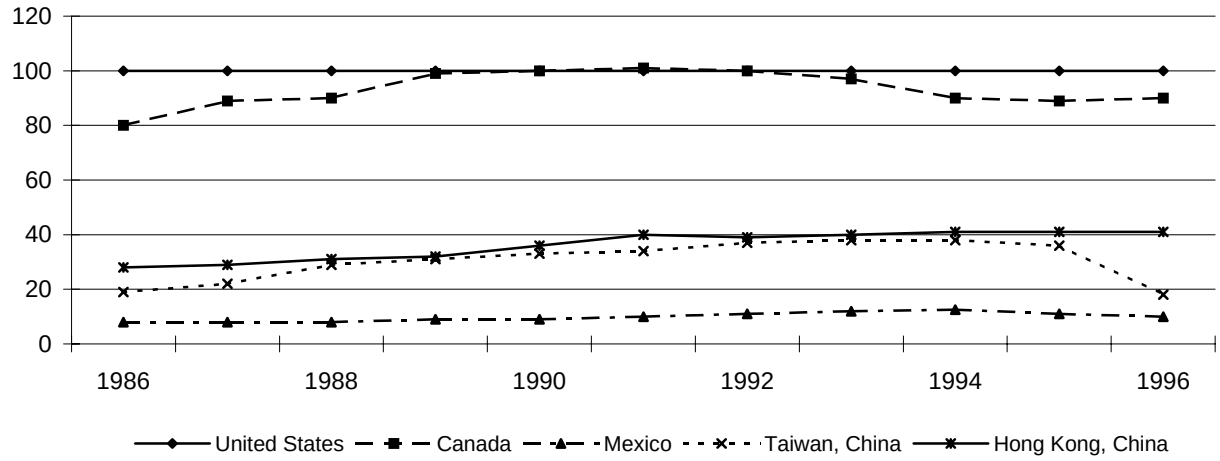
Wages as a cost factor

Low wages are frequently quoted as one of the main reasons for the competitiveness of imports, for FDI and even for the relocation of industries. Figure 5.13 appears to support that view. It compares wage costs in United States furniture making with those of major exporters to that country. Based on exchange rates rather than purchasing power parities, the gap can be staggering, even between neighbouring countries.

Are lower wages the answer? In theory perhaps, but in practice lower absolute wages are not an option. In the United States, the authors argue that the wage disadvantage will persist owing to demographic trends in the country which will lead to continued labour shortages. Other countries are in the same situation.

Attempts to lower absolute wage costs regardless can be a recipe for disaster. In the late 1980s, furniture manufacturers in the United Kingdom came under pressure from imports and tried to cut prices and costs by using lower skilled, "cheaper" workers in more labour-intensive processes. The strategy failed. It resulted in worsening labour relations, even slimmer profit margins and ultimately in the demise of the North London furniture manufacturers (Hazley, 2000).

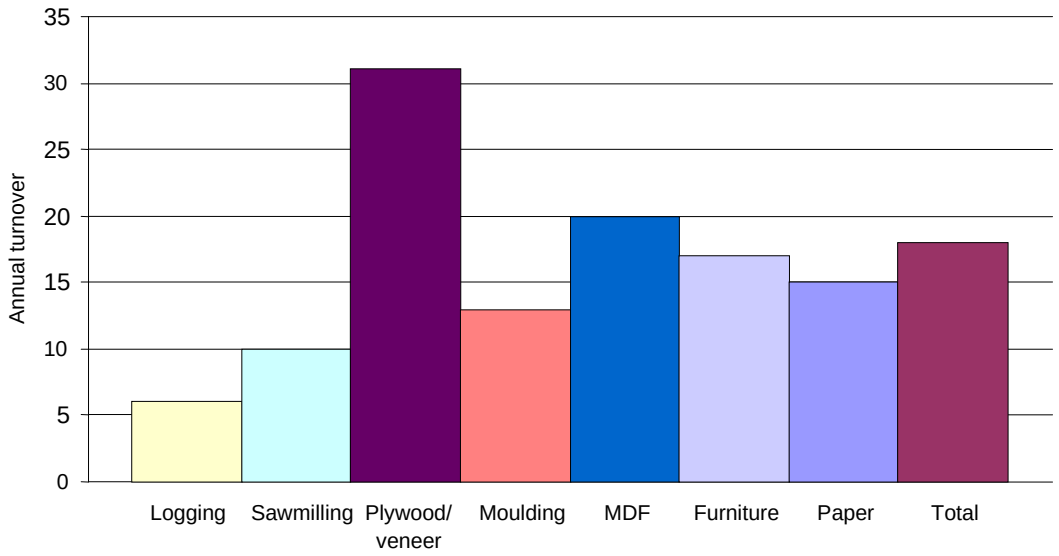
Figure 5.13. Wage costs in furniture making in the United States relative to countries exporting to the United States



Source: Bureau of Labor Statistics, cited by Schuler and Taylor, 2001.

Competitive advantages from low wages can also be short-lived as Malaysian and Polish producers are now finding out. In both cases, the wage costs of their neighbours are now well below their own (*Asiantimber*, 2000). As in the example of the United Kingdom cited above, lowering wages is not a promising solution. It would make wood industries employment unattractive for qualified workers, lead to high turnover, poor quality and stagnating productivity, while the wage cost advantage is shifting to other countries anyway. In Malaysia, average turnover for the forestry and wood industries as a whole is as high as 18 per cent per year, as shown in figure 5.14.

Figure 5.14. Annual labour turnover (%) in the forestry and wood industries (Peninsular Malaysia)



Source: Ho et al., 2001.

The difficulty of retaining workers is greatest where attractive competitors exist, such as the electronics industries, which offer not only higher pay but also a better working environment. The situation is so serious that labour has become the key problem for the wood industries. The shortage is estimated by employers as up to 15,000 workers in furniture alone, one-third of the current workforce. A further symptom of the labour shortage is the fact that the workforce is ageing rapidly. The average age has doubled in a decade from 20 to 22 years in 1990 to around 40 years in 2000. The stopgap solution has been to increase the share of women, who account for 40-50 per cent of total employment in moulding, plywood and furniture, and to import foreign workers (Ho et al., 2001).

Wage levels are, however, only one – and arguably not the most important – factor in the equation. What matters is not absolute but unit wage costs. Unit wage costs are to a large extent a function of productivity, which has been rising rapidly, as seen above. In most countries, productivity development has reduced the share of wages in total cost and has kept wage costs per unit output stable or even lowered them. In the European Union, global productivity in furniture making increased 20 per cent during the 1990s and wages were equivalent to less than 30 per cent of production value (UEA, 2000). This ratio is similar to secondary wood products manufacturing in British Columbia (Wilson et al., 1999).

For the wood industries as a whole, the share is even lower in industrialized countries. In Germany, gross total wages are about one-fifth of turnover (HDH/VDM, 2000). In Japan, they represent 18-22 per cent, up from 14 per cent a decade ago (case study). This rise would seem to be an exception among industrialized countries and is a result of declining investment. Unit labour costs in the European Union in the mid-1990s was below the 1990 level thanks to steep hikes in productivity (EU, 1997). In the most productive sawmills in Austria, wages per cubic metre of output have been kept constant and fell from 30 per cent of production cost in 1960 to 18 per cent in 1995, despite a 14-fold increase in nominal hourly wages (Jechart, 1997).

For this and other reasons, absolute wage levels are not a decisive factor. Tellingly, the most successful furniture exporters from developing countries and economies in transition have been middle-income rather than low-income countries. The success in furniture making of middle-income countries in Eastern Europe is to be attributed to the ability to establish a coordinated value added chain, rather than to low wages per se (Kaplinsky and Readman, 2000). A survey of the wood industry in France goes even further in suggesting that the demand for new products like MDF rather than labour costs is driving the substitution of capital for labour (Lochu, 2000).

To summarize:

- There is a big spread in wages between countries which is unlikely to disappear. Pulp and paper wages compare favourably with other sectors, while those in other subsectors do not and are uncompetitive in tight labour markets.

- Wages have been falling as a proportion of total costs in most countries. Competitive advantage based on low wages is not enough for success and tends to be short-lived.

- Investment in human capital, including in the form of wages, is important. Keeping up with pay levels in other industries while upgrading skills will be a challenge for middle-income countries, where wage differentials between skilled and unskilled workers are greatest.

Working conditions, safety and health

Working conditions vary as much as wages in the forest industries and in a broadly similar way. While certain hazards, such as exposure to noise, dust, solvents and cutting devices persist, in the wood and furniture industries, preventive measures have been quite effective in industrialized countries. That is not necessarily the case in developing countries, where a big gradient exists from larger, export-oriented companies to smaller firms catering for domestic markets. This is reported for Chile (INFOR, 1998), Côte d'Ivoire (Gnabeli, 2001) and Malaysia (Ho et al., 2001).

In big firms, particularly in multinationals, working conditions are fairly good and in many cases equivalent to those in industrialized countries. In smaller ones, even those that are not informal, conditions are generally poorer and can be unacceptable. The average accident frequency in sawmilling in Chile is between 15 and 20 per cent, one of the highest of all industries. The same is true in South Africa, where the wood industries registered an accident frequency of 14 per cent, the third highest in manufacturing industries. Most wood industry firms in Malaysia grapple with noise, dust and accidents. Within the last three years, 12 per cent of employees have had accidents that resulted in a fatality or permanent disability. The reasons for this include a lack of enforcement concerning the use of personal protective equipment and the lack of labour-management cooperation for prevention through safety and health committees, even though these are mandatory in firms with over 40 employees (Ho et al., 2001). A pilot survey of wood industries in China in 1995 arrived at very similar conclusions (Weh, 1995).

The worst safety and health situation is usually found in forestry. Forestry in general, and logging in particular, continue to be among the three most hazardous occupations in almost all countries. Forestry work is also beset by serious health problems. Few workers reach normal retirement age. The safety and health situation is most problematic among contractors (ILO, 1997a).

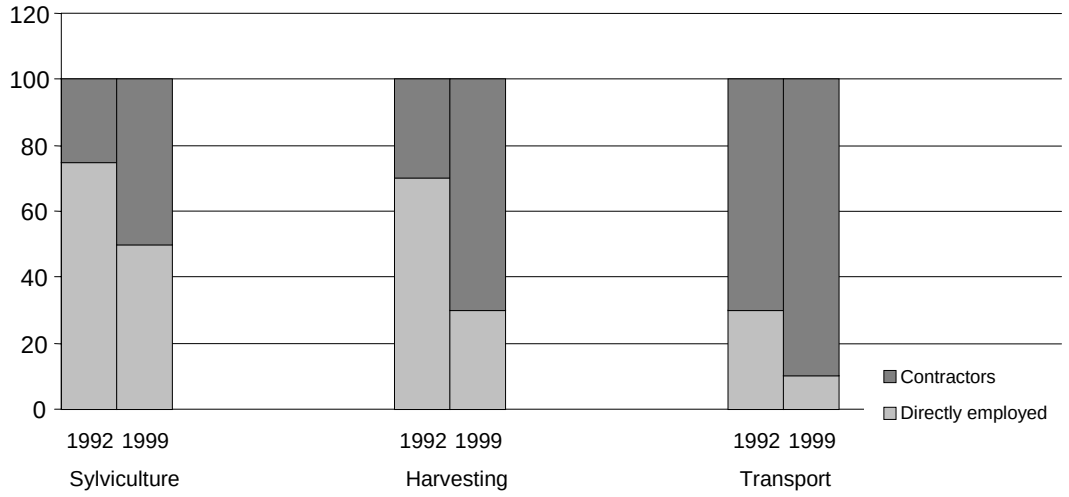
Outsourcing: The quality of employment among contractors

Since the 1970s, forestry throughout North America and Europe has undergone massive structural change heralded by the spread of advanced mechanization and outsourcing of forest work as the standard mode of operation in more and more enterprises and countries. The combined effect has been a dramatic fall in the number of forest workers and the emergence of contractors. Typically, forestry contractors are individuals or firms performing work under a contract for

services, rather than under a contract of employment. This has been extensively documented (see for example FAO/ECE/ILO, 1988, ILO, 1991, and ILO, 1997b).

The phenomenon of forestry contractors has since been spreading to practically all countries. Almost all industrial timber harvesting in Chile has been done by contractors for the last 20 years. In some countries, contractors have emerged much later or are still in the early stages of development. Countries where the rise in contracting was strong in the 1990s include Brazil and South Africa. In South Africa, there has been a pronounced push towards contracting only during the 1990s, making it the dominant work arrangement. This can be observed in figure 5.15.

Figure 5.15. Estimated shares (%) of direct and contractor employees for different types of forestry work in South Africa, 1992 and 1999



Source: Hall and Miller, 2001.

In Brazil, as in most other countries, transport and forest harvesting were the first operations to be contracted out. Lately, much of the silvicultural work has also been outsourced. Today, some 200 contractor firms are active in Brazil and the trend towards contracting out is considered to be irreversible (Barboza, 1999). In Germany, the contractor workforce is expected to reach half of the total in the coming years.

As in those regions where it was introduced earlier, contracting has tended to result in a deterioration in the quality of employment in countries where it is a more recent phenomenon. A survey of forest workers that had been "externalized" in Chile showed virtually no improvements in their situation. On the contrary, two-thirds have lost out in pay and benefits, half have lost out on pensions. For most, work pressure has increased, trade union membership has been lost, and less work clothing and protective equipment is provided (Wenzel and Fecci, 1998). Not surprisingly, labour turnover among contract workers continues to be high according to another study (INFOR, 1998). Between 50 and 65 per cent of workers surveyed had spent less than two years with the current contractor. Employees are hired on "end-of-task" contracts with no defined duration, but typically for a few weeks or months at a time. Because of the low wages and instability of employment, most workers would change jobs if they could. Only some contractors

with more stable arrangements with the forest industry pass on that stability to a core of workers. Labour turnover among silvicultural workers in New Zealand is reported to be as high as 125 per cent on average, and in some cases ranges up to several hundred per cent.

An erosion of wages and benefits associated with the transition to contractors has been observed in South Africa. Wages of manual workers employed by contractors range from 400 to 600 rand (US$50-75) per month, compared to 600-800 rand (US$75-100) or more for those employed by corporations. While the latter are entitled to medical benefits and pensions, the former may receive neither. The situation in South Africa is complicated further by the existence of labour-only contractors. These have allegedly been set up by some forestry companies in order to avoid collective bargaining. In the event of a strike, the labour-only contractor goes bankrupt and since the firm has no assets, workers lose their jobs without any compensation. According to the contractors' association, only 25 per cent of the workforce are engaged in collective bargaining. A government white paper on the forestry sector acknowledges the need to promote sound employment conditions (Hall and Miller, 2001).

Labour-only contractors also exist in Brazilian forestry, but even where formal contractor firms have taken over a decline in unionization and wages has occurred. When a major pulp firm reduced its workforce from 6,000 to about 1,600 during the 1990s, the wages of more than 2,500 silvicultural workers employed by contractors fell to the level of the minimum wage of 160 real (US$75) per month. The avoidance of collective bargaining, though not via labour-only contracting, has also been cited as the primary reason for forestry firms in the United States to move to outsourcing (Garland, 1997).

The advent of contractors has been surrounded by ambiguity from its very inception. To some, they are a symbol of efficiency and modern work organization. To others they are "Cinderellas", left to pick up the crumbs. Yet others regard them as simply villains: unsafe, unskilled, and doing a poor quality job. Experiences like those described above continue to fuel the debate.

Something that tends to be overlooked when strong opinions are held is that there is no such thing as *the* contractor. Contractors can be farmers, self-employed individuals with a chainsaw, or, often, family firms with a few machines; a few are medium-sized enterprises with ten to 20 machines and a good number of employees. Very rarely are they large firms like the biggest South African contractor with 1,200 employees. Plantar of Brazil, with its average workforce of 3,000, is probably the biggest forestry contractor in the world, but is clearly unique.

More typically, contracting businesses are small, under-capitalized and not very profitable. Their business autonomy, in terms of market access, available capital and managerial ability, is often limited. Negotiating the terms of contracts is difficult for the many smallish contractors who usually work almost exclusively for one large customer. Tracing profitability of forestry contractors in Finland from 1977 to 1996, Mäkinen (1999) finds that the median firm lost money for over a decade between 1982 and 1993. They have attempted to compensate by working up to 2,800 hours a year, with a very low remuneration for their own time. A recent survey in Sweden found that contractors work an average of more than 60 hours

per week. Seventy per cent suffer from stress and four out of five contractors are pessimistic as regards their future (Erikson, 2000). Many contractors are kept in the market because of the loans they have taken out, rather than by the economic opportunities. This view is echoed by the president of the Chilean forestry contractors' association, who points out that barriers against entry into the sector are low, but exit barriers in the form of debt are high.

Contractors are therefore faced with a number of dilemmas:

- They are supposed to provide attractive, stable jobs, even though the workload fluctuates, contracts are short, working hours are long, chainsaws are very hazardous and machine operation is monotonous.
- Given the lack of economic independence from the firms commissioning work, should they conceive of themselves as employers or employees?
- They are expected to be productive, well-equipped and environmentally friendly in their operations in the face of unfair competition from farmers, "moonlighters" and price dumping by other contractors.
- They need to be skilled, both technically and as business administrators, yet training systems are ill-adapted to their needs.

In the 1980s, great hopes were vested in the workings of the market, the "invisible hand" that would supposedly lead to the selection of the best performing contractor firms and to continuous improvement. There is little evidence that this is happening. Governments, the forest industry, trade unions and not least contractors themselves have been taking the initiative in a growing number of countries to ensure that forestry contractors can play the crucial role they are assigned in the integrated forestry logistic chains of the future. Such chains are intended to link customers and forest owners, usually via contractors, and pull raw material of the necessary quality and volume through the supply chain "just-in-time" (FAO/ECE/ILO, 1999).

Lower costs in forest operations in the medium term cannot be achieved through cost cutting. It will rest on the ability of contractors to increase productivity. Contractors are also the ones who have to comply with the growing environmental restrictions on forest operations. They will be an important element in certification schemes that assess environmental, social and labour performance. This is a tall order: with their present business environment, their small structure, inadequate capital and staff resources and lack of support from others in the value added chain, most contractors are simply incapable of playing this role. Chapter 6 will consider ways of finding a way through this apparent impasse.

5.3. Skills and careers

Globalization has intensified competition between firms within countries and across borders, and it has opened up new opportunities for exports or further processing to add value and increase profit margins. Higher productivity, as well as better and more consistent quality, are important competitive advantages or even the precondition for entering export markets. The human resource base is critical

for the achievement of these objectives. It is clearly no coincidence that skill development is identified as a priority almost everywhere.

Employers in North America assess the situation in the following terms:

> The wood products industry is in the midst of a technological revolution. Plants are renovating. High-tech machines are coming fast and furious. Companies need employees who can operate, install, fix and dream up these machines. And, of course, these machines are all computerized. In fact, everything is computerized. In this industry, you have to ship, draft, design and sell on computers. And that takes skill. (Forestry Futures web site, 2001.)

Skill deficits in Canada's secondary manufacturing and forestry have been identified by employers as the biggest single impediment to growth in segments with high employment coefficients like furniture, cabinet making and engineered products. The shortage extends to skilled workers as well as technicians (Wilson et al., 1999). Training institutions report brisk demand: at the University of British Columbia, wood processing students are said to be getting six or seven job offers in their third year. Pittsburgh State University is contacted by at least two companies looking for wood processing specialists every week (http://www.woodlinks.com).

Skill deficits are reported for practically all industrialized countries reviewed in this report. The situation in developing countries is even more difficult, because basic education levels are often low and training institutions rare, understaffed, ill-equipped and poorly funded. Even after a 20-year boom in the forest industries in Chile only 10 per cent of workers in forestry and sawmilling have received training, most of which has been informal (INFOR, 1998). There is only one wood industry training centre in all of Indonesia, the biggest exporter of tropical timber (Erwidodo et al., 2000).

Malaysian furniture production on contract as "original equipment manufacturers" has created a low-wage economy. Producers are undercut by competitors in neighbouring countries. A combination of original design, higher quality and productivity are seen as the way out of the dilemma (*Asiantimber*, 2000), but the human resource base is not available at the moment. Training centres have recently been set up but they tend to be used exclusively by larger firms (Ho et al., 2001). Whether an industry with poor working conditions and below average wages will be able to attract and retain skilled workers is doubtful. Lower middle-income countries like Malaysia are faced with a much steeper wage/skill gradient than upper middle-income or high-income countries (Freeman and Oostendorp, 2000). In other words, skilled workers will expect disproportionately higher wages and salaries.

The high proportion of expatriates in Gabon is blamed on very low skill levels among nationals. Vocational training is offered only for carpentry and furniture making. Existing training is inadequate, however, as it is not related to the needs and realities of enterprises, and trainers have been isolated from practical work for too long (François, 1999). Funds available from the national training system are not used by the forest industry in several developing countries.

Even European Union countries with a long tradition of training and a good infrastructure are concerned. Training institutions face difficulties in attracting enough students. According to a report to the European Parliament (2000), skilled labour shortages may become a serious threat to the prosperity and competitiveness of forest-based industry in the very near future. A detailed assessment in France reveals that new employment profiles require multifunctional personnel and specialization in some high-tech areas. These higher skill requirements will make recruitment more difficult, and some firms will have to raise pay to tackle the problem. Sawmilling jobs are considered "second choice" by applicants and current in-house training limits mobility. The more technically advanced panel makers anticipate recruitment problems for skilled workers and technicians from 2005 onwards. Recruitment problems are forecast to become generalized and should increase with lower unemployment (Lochu, 2000).

5.4. Rights at work

The protection of rights at work is often not easy in the forestry and wood industries, as most forestry workplaces are in rather remote areas and often in temporary and shifting locations. This is also true for much of the primary processing industry, particularly in developing countries. While in most industrialized countries the coverage by labour inspectors from government or accident insurers is limited, in developing countries it is still largely non-existent (ILO, 2000).

In spite of the general lack of information on the subject, a number of serious violations of fundamental rights have been documented in recent years. These include the use of child labour in industrial logging in southern Brazil (Rodrigues, 1995) and in charcoal making in many parts of that country. Child labour and bonded labour in logging have been reported from various states in the Amazon. ILO assessments of the use of forced labour have found evidence of it in connection with logging of teak in Myanmar and with Dayaks in logging concessions and forest plantations in East Kalimantan in Indonesia (see the ILO Second Global Report under the Declaration on Fundamental Principles and Rights at Work, 2001). Globalization and FDI have contributed to the incidence of conflicts between forest industries and government forest policies on the one hand, and indigenous peoples and other local communities on the other, as the following examples from all continents show.

Globalized forest industries, indigenous peoples and local communities

The traditional livelihoods of Pygmies in Central and western Africa are under huge pressure from major logging activities and commercial hunting. Land tenure regimes that do not take account of Pygmy lifestyles are a major cause of social exclusion. In Central America, Miskito Indians in Nicaragua are in a similar situation as a result of the inroads into their traditional habitat by national and multinational logging companies (Utting, 1993).

Indonesia has been a focus of disputes between forest industries and communities for some time. Fried (2000) describes the destruction by logging

concessions of rattan, rubber and fruit production practised by the Bentian Dayak communities of south-east Kalimantan. Numerous clashes between concessions and local people, arson, and sabotage by uprooting newly planted tree seedlings have occurred in various parts of Indonesia. A pulp and rayon mill may be forced into bankruptcy by conflict with the local community (Barr, 2000; Erwidodo et al., 2000). In the most recent incident, workers of a Korean logging company were abducted by locals (*Holz-Zentralblatt*, 19 February 2001).

Along with the drop in harvesting in natural forests, human rights violations linked to forestry declined in the Philippines in the 1990s compared to earlier decades, although they continued and shifted from logging in timber concessions to forest management and commercial tree farming. Many timber concessions encompass or extend into lands populated by indigenous communities. Numerous cases of arbitrary detention, killing and forcible displacement by forestry firm guards have been documented by human rights activists, who have also alleged involvement of government and military personnel in these violations and in illegal logging. Foreign aid-sponsored reforestation projects under industrial forest management agreements have been criticized as leading to intimidation and violence against forest dwellers, whether indigenous peoples or other local communities (Human Rights Watch/Asia, 1996; Velas, 2000). Similarly, the expansion of industrial plantations has in many cases pitted local communities and indigenous groups against forestry companies and the government. Box 5.1 describes a similar stand-off in Chile in more detail and considers possible solutions.

While it may be rather counter-intuitive, rapid expansion and economic growth in the forestry sector can be just as disruptive for local communities as sudden and severe restrictions on operations. Explosive growth affects the economic and social fabric of the countries or regions concerned. Entirely new industries are created almost from scratch in a very short time frame, as plantations of the dominant *Pinus* and *Eucalyptus* species mature in seven to ten years for pulpwood and 20-25 years for sawnwood.

Big firms, be they multinational or national, have the ability to invest in plantations on a scale and at a speed that changes entire landscapes and rural economies in a matter of a few years, as the example of Chile shows. Harvesting levels in Uruguay are set to rise from some 2 million m^3, much of which was fuelwood, to 10 or 12 million m^3 of industrial roundwood in less than a decade. This poses a challenge in many ways, for example, in the need to ensure decent work in this emerging sector.

On the one hand, the very rapid increase in production can lead to massive job creation in the sector, far exceeding the speed of adaptation in organizations and training systems. On the other hand, these drastic changes inevitably have a major impact on local communities, including indigenous peoples. As has been seen in the above examples, such an impact may well be negative, displacing other land uses and creating negative externalities.

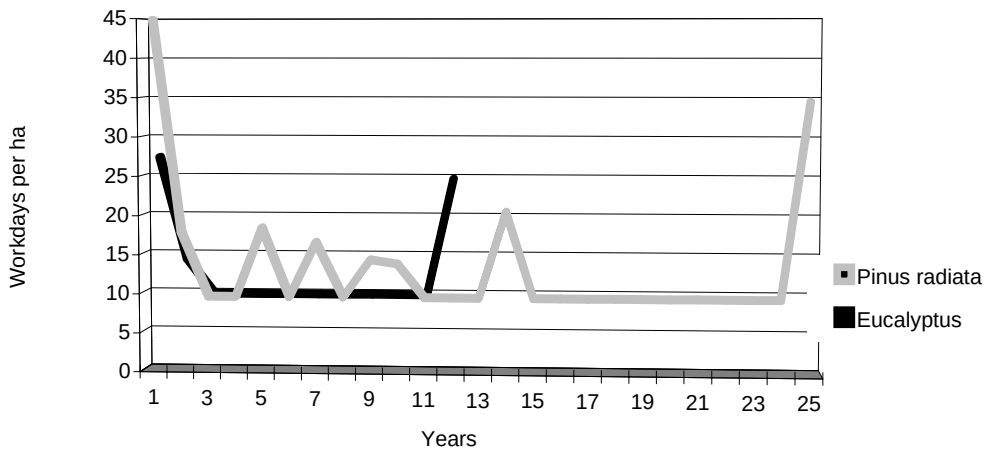
Box 5.1
Uneasy neighbours – Plantation forestry and local communities in southern Chile

Plantation-based forestry has become one of the most dynamic sectors of the Chilean economy. Fast-growing plantations, mostly of *Pinus radiata* and *Eucalyptus globulus*, cover about 2 million hectares, and about 100,000 hectares are newly planted every year. While the macroeconomic returns on the investment are well documented, there is hardly any information on the impact of the spectacular growth on the other two dimensions of sustainable development: the environment and society. This has been the subject of an often polemical debate in Chile. A case study was carried out by the Forest Research Institute of Chile (INFOR) at the request of the ILO, in an attempt to provide an empirical basis for discussions between government, forestry industry, trade unions and other interest groups. The study paid special attention to the impact on rural communities and forest workers.

In the last few years, Region IX. has become the centre of plantation expansion. This region has the highest share of rural population in the country. Traditional small-scale agriculture, on which the region still depends to a large extent, is in deep crisis. The region has a history of rural poverty and out-migration. In recent years, structural change has been much accelerated by pressures from free trade policies and agreements such as MERCOSUR. It was hoped that vigorous growth in forestry would offer an economic alternative to ailing rural areas.

The study suggests that forestry is not living up to the high and partly unrealistic expectations. Fast-growing plantations offer much less local employment than agriculture per unit area (see figure 5.16 below).

Figure 5.16. Labour requirements in plantations in Chile (workdays/ha)



First rotation plantations require on average less than 14 workdays/ha/year, compared to around 30 days for most agricultural crops. In addition, labour requirements are subject to extreme fluctuation between seasons and stages of plantation development. The capacity to absorb labour is therefore low. From the point of view of local jobseekers the situation is aggravated by the fact that most plantation-related work is done by contractors from other regions. Only 13 per cent of the workers in the study sample were from the district in which they worked.

Districts with high proportions of forest cover did not exhibit the expected reduction in poverty levels relative to predominantly agricultural ones. Instead, they continued to have strong out-migration. The perception of the forestry sector by local authorities and the population at large is very negative. Forest workers are the only ones in the region with a positive opinion about plantation development, mostly because it offered them jobs. A detailed sample survey of about 100 workers has shown that there is little advantage for forestry in terms of quality of employment compared to jobs in traditional agriculture. Wages are generally not significantly higher. Forestry employment is unstable, with virtually all workers only contracted until the completion of work at a particular site. It also requires long periods in camps and separation from families.

Forest plantations are unlikely to provide an alternative to agriculture in terms of employment, but they could benefit local development through a number of changes in current practices. Local employment opportunities could be created through training and the development of local contractors. Forestry settlements could serve to stabilize rural populations, where traditional villages are disintegrating, to limit the need for large-scale imports of workers from other areas. The present tax system leaves a very small share of forest sector taxes for local communities, who face significant costs for road maintenance and resettlement. Very little wood processing capacity has been established in the region. Plantation development has so far been carried mostly

by large, integrated forestry companies. A system of smallholder forestry is suggested to allow farmers and indigenous people to participate. Most of the measures would require increased dialogue and coordination between government and the forest industry on the direction and the pace of plantation and industry development. The study's conclusions and recommendations were given some consideration, but not much changed on the ground. The situation has since come to the boil. In 1997, a representative of the Mapuche indigenous people stated before the UN Human Rights Commission that more than 80,000 ha of land in regions VIII and IX in the south of Chile were disputed between Mapuche communities and forestry companies with numerous cases pending in court (Mariqueo, 1997). In 1999 violent clashes erupted over land ownership of plantations between Mapuches and large forestry companies (*Financial Times*, 8 Dec. 1999).

Source: Based largely on Unda and Stuardo, 1995.

In the 1970s, the Government of Fiji embarked on a strategy to develop plantation forestry for export. The land was to be leased from indigenous landowner groups in return for the promise of income from fees. The revenue received in exchange for their land, on which fast-growing trees were to be planted, was perceived as derisory by the communities, and in the late 1970s and early 1980s they set up roadblocks and set fire to plantations, resulting in the loss of several thousand hectares.

Employment in agriculture is falling in relative terms in most countries, and in industrialized ones even in absolute numbers. This means more and more people are leaving agriculture and fewer can be absorbed by that sector. What role does forestry play in the process?

Research in industrialized and developing countries suggests that forestry can have a positive effect on agriculture when it provides supplementary income from land that is suitable only for marginal agricultural production. Incomes obtained in forestry per hour of work can in fact be substantially higher than in agriculture in forest-owning farm households, even though forestry usually accounts for only a fraction of overall income (see for example Brandl et al., 1996, for Germany, and Livingstone, 1986, for Kenya). In these situations, forestry maintains the "sponge effect" of small-scale farming, significantly reducing migration into towns.

A similar "symbiosis" exists between farming and much of the forest-based informal sector. The majority of small-scale forest-product enterprises are located in rural areas near their raw material sources. The enterprises are intimately linked with farming, and not simply because farmers are their most important customers. Much of the capital for the initial investment originated in agriculture. The revenue which often supplements farm income is particularly precious if it is in cash rather than in subsistence produce.

Where forestry competes with agriculture for land, increases in forest cover lead to large losses of employment per unit area for all but the most extensive forms of agriculture. This effect is documented for Wales (Johnstone and Price, 1996), Scotland and Ireland (Thompson and Psaltopoulos, 1996), Chile (Unda and Stuardo, 1996) and India (Srivastava and Saxena, 1991). Average labour requirements per hectare are three to ten times lower for forestry than for most types of agriculture. Forestry is not a "job killer" in these cases, as is sometimes claimed; rather, it precipitates structural change in an economy and in land use that would most likely take place anyway, because the agriculture that is replaced was no longer viable.

Positive net effects on employment are seen in Uruguay (MGAP, 1996) and Argentina, where plantations take over areas not previously used or used only for extensive grazing, which has a still lower carrying capacity for employment per unit area than plantation forestry.

Japanese firms have frequently encountered problems with local populations demanding more benefits from the investments on their lands, including infrastructure to serve their needs and employment opportunities. Those Japanese companies in Papua New Guinea that had demonstrated good corporate citizenship by accommodating reasonable demands were spared when riots broke out in the area where they were active (Fujiwara et al., 2001).

According to a study commissioned by the Australian Government, the negative impacts of plantations often include reduced access and limitations on traditional activities. The study suggests that unacceptable ecological or social costs are a result of design deficits or poor management (ABARE, 1999). It is clear from the above examples that these factors frequently play a role, but also that there is more to it in many situations. As Whiteman et al. (1999) pointed out in a report for the World Bank, FDI is critical to the development of the forest industry in developing countries, but benefits of this development are often not distributed very fairly. With that additional element, the overall conclusion of the ABARE study appears fitting: giving full consideration to potential social impact can help to maximize benefits. Examples of this are discussed in Chapter 6.

5.5. Social dialogue

As must be expected given the scale and speed of development, globalization is affecting the levels of organization and of collective bargaining in the forest industry. Growth in employment is concentrated in developing countries, where organizations of workers, and often also of employers, are weaker. Unionization rates in Malaysia are below 5 per cent for the forestry sector as a whole, with 10,000 union members in 46 firms, although the rates are higher in the processing industry; a sample survey of mills and furniture factories in Peninsular Malaysia found that unions existed in 18 per cent of firms. In three-quarters of the non-union mills, there was no collective bargaining, but negotiations took place on an individual basis (Ho et al., 2001). A similar pattern is found in Chile, where unionization rates are 23.5 per cent across the sector, 47 per cent in industry, but only 13 per cent in forestry (INFOR, 1998). These rates are low compared to those in traditional forest industry countries in northern and Central Europe or in Canada.

In the United States, unionization rates have been falling since the early 1980s, when according to the trade unions many firms adopted an anti-union stance. Unionization rates have nonetheless remained fairly high in the pulp and paper industry. In transition countries, the massive restructuring is undermining existing organizations. In the Russian Federation, three-quarters of all employees are still union members but the rate is falling (Petrov, 2000).

In many emerging producer countries forest industries' associations exist, but do not assume the role of employers' organizations. One reason for this is often the absence of collective bargaining at the national level. Unfortunately, this usually

translates into industry associations having hardly any information on social and labour issues in the sector. Together with the lack of a mandate this means that they are not well placed to engage in any kind of social dialogue. A further difficulty with forest industries' associations in most countries is that, as in other sectors, small and medium-sized firms are heavily under-represented.

In all countries, the trend towards outsourcing has complicated the task of organizing and establishing forums for social dialogue. Contractors' associations, where they exist, are usually understaffed and underfunded. Like trade unions in developing countries, they find it difficult to live up to the role of the valid, technically well-versed partner in social dialogue that they are increasingly expected to play.

Another issue that is raised frequently in connection with globalization is the mismatch between firms that operate in several countries, and in some cases globally, and workers' organizations that are confined to individual plants or countries.

These weaknesses of organizations are a reason for concern, not least because they create difficulties for the sort of consultation and dialogue that are increasingly called for as part of the efforts to put the forest industry on a path to sustainability.

5.6. Sustainable development and decent work

All the issues discussed above have been part of the social partners' agenda for a long time, but were left to human resources managers and shop stewards to deal with. The adoption of the sustainable development model means that the concerns of people living in and off forests have been moving to centre stage in forest policy and companies; this is an important step because of the relationship between people and forests.

People affect forests both positively and negatively. Human input, including labour, is indispensable for the management and protection of intact forests, and even more so for the restoration and rehabilitation of degraded forests. However, people are also the most devastating agents of destruction and over-exploitation of forests. Conversion of forest land to other land uses and the degradation of forests through destructive logging practices or unsustainable levels of harvesting of forest products by far exceed the damage done to forests by natural causes such as fire, storms or pests.

It is now widely accepted that many of the underlying causes of forest destruction and degradation are of a social nature. Poverty is probably the single most important driving force in the destruction of forests. There is thus a functional as well as an ethical link to the social component of sustainable development: the equitable sharing of the proceeds of economic growth. Forests need to be socially beneficial in order to contribute to the objective of sustainable development. Benefits derived from the existence and management of forests and accruing to people living in and around them may actually be a precondition for the conservation of the forest.

Several social groups can be identified that have a close and specific relationship with forests. They include:

- forest dwellers;
- forest users;
- forest owners; and
- forest workers.

Local communities interact closely with forests. This is particularly true for forest-dependent communities and many indigenous and tribal peoples who derive their economic livelihood and often their cultural and spiritual identity from forests.

In many countries, forest owners account for a large proportion of the beneficiaries of forest management. In particular the owners of small, private forests often derive a significant share of their income from their forests. All forest workers, whether salaried workers, contractors, self-employed workers or forest farmers, are obvious stakeholders in forest management as contributors, potential beneficiaries and those whose existence hinges on the sustainability of forest management.

The same applies to downstream forest industry. An ITTO (1998b) six-year project contains the following conclusion concerning goals for sustainable forest industries:

> Social issues are important in the sector as forests cover vast land areas with people living in and around them. Dependence on forests of populations varies and is probably strongest in the case of indigenous forest peoples whose entire lifestyles are determined by the extent and quality of forests where they live. The key issues are: (i) how are forests and their benefits shared, (ii) how can the social needs of forest owners, dwellers and communities be met, (iii) what are the rights in setting goals and selecting technology, and (iv) how these rights are taken into account in the respective decision-making process. As industry is often integrated with forest management activities, these issues influence what technologies are applied and how operations are planned and managed. (ITTO, 1998b, p. 5.)

As the crucial role of the social dimension of sustainable development for the prospects, sometimes even for the survival, of the forest industries is increasingly recognized, the challenge becomes one of identifying the relevant aspects, defining them and implementing them in day-to-day practices. Possible approaches to this are explored in Chapter 6.

6. How to move forward? Decent work in a globalizing and sustainable forest industry

The preceding chapters have analysed the dynamics of the sector and identified the challenges it faces with respect to the realization of decent work. These include:

- the promotion of good quality employment, in particular through the development of small enterprises such as forestry contractors and value added further processing;
- finding ways of dealing with large-scale redundancies resulting from restructuring or natural resource shortages;
- creating the conditions for decent work and reconciling the interests of the industry with those of local communities in areas of rapid expansion;
- strengthening the institutions and partners of social dialogue; and
- achieving both objectives – decent work and sustainable development – simultaneously.

This chapter draws on forestry sector experience from around the world to offer some suggestions as to how these challenges could be met.

6.1. The relationship between decent work and sustainable development

Globalization, decent work and sustainable development: the first a powerful trend, the latter two goals to aim for. Are they compatible with one another? How do they relate to each other?

Table 6.1 places sustainable development and decent work concerns side by side. As was to be expected, closer inspection reveals that the recurrent themes in discussions, agreements and guidelines on the social dimensions of sustainable development in the forest industries match rather well with the components of decent work. Decent work is to a large extent equivalent to the third pillar of sustainable development. It should be noted that decent work not only addresses social equity but can also contribute to economic viability and the conservation of the environment.

Table 6.1. Social dimensions of sustainable development and decent work in the forestry and wood industries

Sustainable development requirement	Decent work category
Need to recognize the *rights of those depending on forests*, be they workers, indigenous peoples or local communities living in forests, as well as those of forest owners	*Rights* and *social protection at work* in the forest industries
Importance of *skills, efficiency and productivity*	*Human resources development* and *small business development*
Fair sharing of benefits	*Rights at work* and *employment and income opportunities*
Participation of all interested parties in decision-making and mechanisms for *conflict resolution*	*Social dialogue*

If decent work really is an indispensable ingredient of sustainable development of the forest industries, we need to consider how it can be integrated into policies and industry practice.

6.2. Incorporating the social dimension of sustainable development into forest policies and forest industry practice

Looking at sustainable development in the forest industries in that light, it becomes clear that the decent work agenda has actually been permeating the debate and efforts to move towards sustainability all along. Various ITTO documents were among the first to point out the relevance of ILO texts, in particular of ILO Conventions (ITTO, 1996, 1998a, 1998b). Sustainable development is inconceivable without decent work. Consequently, there is a major opportunity to build on past achievements and on the consensus on decent work between ILO constituents and to use the institutions of social dialogue when it comes to putting sustainable development into practice in the forest industries. Specific examples where this has been happening include:

- the formulation of a shared international vision for sustainable forest management and for forest policy and industry strategy;
- certification; and
- the adoption of codes of forest practices.

As indicated in Chapter 5, a shared vision for sustainable forest industry development has been emerging in the form of sets of criteria and indicators. ILO texts can contribute very usefully to defining the social components of this vision.

Using ILO texts to develop social criteria and indicators for sustainable forest management

As has been pointed out earlier, the selection and use of suitable criteria and indicators are one of the keys to progress in the practice of sustainable forest management. From the beginning, the formulation of criteria and indicators has

suffered from a bias towards environmental concerns and economic interests; social aspects have been covered to a varying and often unsatisfactory degree. A second obstacle to adequate incorporation of the social dimension has been the lack of commonality between the various sets of criteria and indicators. This is due to differences in the selection and definition of parameters. There is broad consensus that comparability of criteria and indicators internationally and between certification standards is desirable. It has been suggested by various authors that ILO texts could provide a basis for shared criteria and indicators of social aspects of sustainable forest management (see for example ITTO, 1998a). It has also become clear that the contents and nature of relevant ILO texts are little known and understood by the forums where criteria and indicators for forestry are discussed.

A guide to ILO texts has recently been published in an attempt to fill this gap (Poschen, 2000). It presents a selection of ILO texts deemed particularly relevant to the forestry sector and offers an explanation as to why and how they should be taken into account. The guide proposes a set of social and labour criteria and indicators for forest management covering three broad elements:

- forest work (human input into forest management);
- sharing of benefits from forests;
- participation and conflict resolution.

The set is based on ILO Conventions and the ILO code of practice on safety and health in forestry work, documents that have been negotiated and agreed by the governments, employers' and workers' organizations of the more than 170 ILO member States. The elements that have been taken into account are shown in the tables below.

Table 6.2. Human input (labour) criteria and indicators

Aspect of forest work	ILO basis for minimum standards
✓ Right to organize and bargain collectively	⇨ Conventions Nos. 87 and 98
✓ Elimination of child labour	⇨ Convention No. 138
✓ Elimination of forced labour	⇨ Conventions Nos. 29 and 105
✓ Non-discrimination	⇨ Conventions Nos. 100 and 111
✓ Qualified workforce ✓ Safety and health ✓ Workers, contractors, self-employed	⇨ ILO code of practice on safety and health in forestry work (provisions at enterprise and worksite level)

The FAO model code of forest harvesting practice identifies the "development of a competent and properly motivated workforce" as one of four essential ingredients in forest harvesting operations if forests are to be managed on a sustainable basis (FAO, 1996). The statement also applies to forest operations other than harvesting. The second social element of sharing of benefits applies to both labour and to local communities, whether or not they are composed of indigenous and tribal peoples. In the case of labour, the sharing is primarily in the form of wages and salaries and remuneration and the minimum wage are therefore relevant criteria. Likewise, one of the most desirable ways for local and forest-dependent

people to share in the benefits of sustainable forest management is through employment opportunities. Such opportunities may be a precondition for sustainable management where local populations would otherwise have no economic stake in the continued existence of the forest and few alternatives to destructive practices for their livelihood. Gainful employment in forestry is in turn contingent on opportunities to acquire the necessary skills.

In addition to or independently of benefits from forest management accruing from wage employment, indigenous and tribal peoples and local communities benefit from, and indeed often depend on, traditional or customary uses. The cultural values of many communities are intimately linked with forests. To be socially sustainable, forest management has to protect these rights and values.

Table 6.3. Criteria and indicators for sharing of benefits from forests

Sharing of benefits	ILO basis for minimum standards
✓ Remuneration/minimum wage	⇨ Convention No. 131 and Recommendation No. 135
✓ Employment and training opportunities for local and forest-dependent people	⇨ Convention No. 169 extended by analogy to local communities
✓ Respect of traditional use rights and cultural values	⇨ Convention No. 169 (Arts. 13, 14, 15, 20, 23)

Forests are subject to numerous and often conflicting demands from a variety of stakeholders. Participation of stakeholders can be an effective way to defuse conflict and to ensure that the cost and benefits of forest management and use are shared in a fair and equitable manner. Effective participation is also seen as a means to maximize the overall use and benefit of forests.

Table 6.4. Criteria and indicators for participation and conflict resolution in forest management

Participation and conflict resolution	ILO basis for minimum standards
✓ The right to information and participation in decision making	⇨ Convention No. 169
✓ The right to organize and defend interests collectively	⇨ Local communities – Convention No. 144 Workers – Conventions Nos. 87, 98 Indigenous peoples – Convention No. 169
✓ Conflict resolution based on consultation and consensus	⇨ Convention No. 169 (Arts. 6, 7)

Sustainable forest management is ultimately about people, not about trees. Standards that cover biological aspects such as biodiversity and nutrient cycles in great detail, while neglecting the social functions of forests and the social conditions for their continued existence, cannot meet their intended objectives. Social and labour aspects need to be brought into focus to balance the current bias towards ecological and sometimes economic functions. Consistency, harmonization and internationally shared minimum standards are all the more important because of the pace and the breadth of globalization in the forestry sector. Much of the relevant ground can be covered by using ILO texts to serve as references for definitions, threshold values and verifiers.

(For the full set of criteria and indicators derived from ILO texts, see the guide itself, which is available in English and Spanish from the ILO and the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) in hardcover as well as on the following web pages: http://www.gtz.de/forest_certification/english/aktuelles.html and http://www.ilo.org/public/english/dialogue/sector/sectors/forest.htm#Heading5.)

Certification

Voluntary certification of forest products is perhaps the most comprehensive attempt to translate the components of the sustainable development objective into specific guidelines for industry. The discussions about certification take place in an unusual but potentially very potent setting for social dialogue, where industry, workers' organizations, and in some cases governments, interact with civil society, both nationally and globally.

Several certification schemes exist, paying varying degrees of attention to social and labour concerns (for detail see table 3 in Poschen, 2000). The major scheme with a global scope is the one developed by the Forest Stewardship Council (FSC). It explicitly addresses the rights of workers and local communities, in particular of indigenous peoples. The FSC principles require compliance by the industry with all ILO Conventions ratified by the country in which they operate, and in all cases observance of Conventions Nos. 87 and 98. Some of the national certification standards based on the FSC principles go well beyond this. Encouragingly, most existing schemes have significantly widened their coverage of social and labour aspects in recent years or are about to do so.

The guide to ILO texts referred to above has met with a favourable response among certification schemes. The Pan-European Forest Certification Council has decided to include all Conventions covered by the ILO Declaration of 1998 in its standard and to recommend the use of the ILO code of practice on safety and health in forestry work as a good basis for the formulation of national standards (PEFC, 2001). The Forest Stewardship Council has decided to incorporate the guide into its manual for certification assessors.

Evidence of improvement of practices resulting from certification is still limited. A study of certified forests in Brazil and the United States carried out in 1999 suggests that it has had impacts on both environmental and social aspects (Prado Braga, 2000). The research investigated six certified forest operations, five in Brazil and one in the United States, assessing the changes the firms had been obliged to make in order to qualify for certification according to the Forest Stewardship Council set of criteria and indicators. The operations visited were in natural tropical forest as well as in plantations, and the firms differed widely in terms of scale and type of ownership.

The study considered the conditions set by certifiers that prompted changes in forest management. It showed that all firms had to make some changes in order to qualify, but the number and nature of these changes varied widely. A very high proportion of the changes were tailored to local conditions rather than being generic. In total, the six firms had been asked to meet 155 conditions. Environmental changes accounted for more than half the total, but were not judged

difficult to make. The 45 social and 25 economic demands were seen as more complex and requiring more far-reaching adjustments in management.

Four of the six forest operations had social conditions imposed on them. A little over half of these concerned forest workers and the other half local community interests. The major impacts encountered were improvements in:

- worker training;
- working conditions, including safety and health and equality of treatment between contractors and directly employed workers;
- pay in accordance with legal requirements;
- community relations, in particular the establishment of channels of communication with neighbouring communities.

Codes of forest practices constitute a complementary approach, with a more limited coverage of social aspects, but contributing significantly to the protection of the resource base and directly applying to the level of operations. These are discussed below.

6.3. A sustainable resource base

As highlighted in the ITTO report, an assured supply of raw material under varying market conditions is a basic requirement for long-term industrial success. Imports of raw material are of course an option, and some countries, such as Italy, the United Kingdom or the Netherlands, have built a sizeable and successful wood industry without a significant domestic forest resource. In some cases, the reliance on imports circumvents rather than solves the problem and in effect "exports" the lack of sustainability to supplying countries. The examples cited in this report and others show that the reliability of such supplies over time at affordable prices is critical and cannot be taken for granted. Numerous countries and firms have learned this lesson the hard way, in some cases paying with stagnation or even the collapse of their industry.

There are two main dimensions to the issue of sustainability from a decent work perspective, namely:

- the protection of existing resources; and
- the expansion of the resource base, primarily through plantations.

Protecting existing resources

From a social and labour perspective, the challenge of protecting existing resources is closely linked to the problem of deforestation, to good management practices in forests used for raw material supplies and to the challenge of dealing with the social impact of sudden resource shortfalls.

Deforestation

Deforestation is a complex problem that cannot be adequately addressed in this report. The following is limited to highlighting some of the salient issues that have a direct functional link with social concerns.

For many developing countries, deforestation and forest degradation have led to an enormous loss of forest resources. After the very superficial debate during the 1970s and 1980s, the view has taken hold that little is gained by stereotyping and gross simplification. Environmental groups used simply to blame "logging" for deforestation in the tropics, and the forestry sector responded by pointing the finger at farmers clearing land for agriculture. Fortunately this sterile debate is largely over. The understanding that has developed of the mechanisms leading to deforestation has begun to differentiate between the apparent and the underlying causes of deforestation. The former are in fact mechanisms and symptoms, rather than causes.

The underlying causes are rather deep-rooted and often structural. Many of them originate from outside the forestry sector. The Intergovernmental Forum on Forests (IFF) has therefore emphasized the need for effective policy coordination in addressing the underlying causes of deforestation. These are often interrelated and social and economic in character, and include poverty, lack of secure land tenure patterns, and inadequate recognition of the rights and needs of forest-dependent indigenous and local communities within national laws and jurisdiction (United Nations, 2000).

While the forest industries and "logging" may be at the heart of the problem only in certain cases, forest management can often contribute to attenuating the underlying social causes such as poverty and the needs of local communities, as was discussed earlier. As forestry staff of the World Bank put it: "The larger underlying challenge … is to develop an effective linkage between forest outcomes and poverty alleviation through sustainable development" (Blaser and Douglas, 2000). A tall order indeed, as tens, or even according to some rather inflated estimates hundreds, of millions of people derive a major part of their income from forests. To make matters worse, a high proportion of these people are poor. As the World Bank also points out, poverty is endemic in many forestry and woodland areas. To conclude from this that forestry development can be the main vehicle for lifting forest-dependent people out of poverty is a potentially very dangerous misconception. Forestry can contribute and should do so in its own best interest, but expectations should remain realistic (Poschen, 1997).

In order to make the best possible contribution, the IFF included among its agreed proposals for action proposals to:

- create appropriate procedures to promote effective participation of all interested parties in decision-making about forest management; and

- develop and implement appropriate strategies to ensure protection of the full range of forest values, including cultural, social, spiritual, environmental and economic aspects, recognition of multiple functions and sustainable use of all types of forests, with particular regard to biological diversity, community and

other interested parties' participation, and integration of indigenous and local communities' livelihood needs.

It may be worth pointing out that these suggestions have been incorporated in the set of criteria and indicators developed in the guide to ILO texts.

Protecting resources through codes of forest practices

A growing number of countries have adopted codes of forest practices over the last decade. Such codes provide guidance for management using technology and methods that are productive and protect the environment as well as the health of workers. From a decent work perspective, codes typically address the issues of safe work, skills and training, working and living conditions, as well as social protection. Codes can be either legally binding or voluntary. In most cases, governments, industry and workers are involved in the design and implementation of such codes. In the early 1990s, the ILO assisted the Government of Fiji in a pioneering effort to introduce the first such code in a tropical country. Evaluations in 1997 (ILO, 1996) and 1999 (Wells, 1999) showed that this effort has been very successful in terms of maintaining economic viability, reducing environmental impact and improving conditions for workers.

This approach, including the concern for workers, has since been promoted by other organizations. In 1996 the FAO published a model code with extensive coverage of safety and training issues and in 1998 the FAO Asia-Pacific Forestry Commission adopted a regional code which is to serve as the blueprint for national ones. For safety and training the regional code relies on and recommends the ILO guidelines. This advice is heeded in countries throughout the Asia-Pacific region developing their own codes. Fourteen countries in the region have already adopted national codes, four are developing them and five others are planning to do so. The regional forest commission has formally adopted a detailed ten-year regional strategy. The expected outcomes include:

- positive economic impacts at the local level resulting from increased employment, economic activity and flow of benefits;
- a sustainable and more efficient and competitive forest industry in the region, which also takes into consideration the social and environmental values of the forest;
- improved institutional capacity and capability of staff and workers in the forest sector (FAO/AFPC, 2000b).

Following requests from governments and industry associations, the ILO, partly in cooperation with the FAO, has since assisted the forestry sector in Chile, Zimbabwe, Uruguay, China and Mongolia with the formulation of national codes of practice.

Codes or equivalent documents have also been drawn up by many larger forestry companies. A recent example is the manual of commercial and political principles and work procedures issued by Forestal Oriental in Uruguay, a subsidiary of Shell and UPM-Kymmene (Forestal Oriental, 2000a).

One of the challenges encountered in many countries is the weakness of workers' participation. Code development and implementation offer a forum for social dialogue focusing on concrete and specific issues, but workers and their representatives often lack the technical and institutional capacity to participate on the same footing as other parties.

Quite a different scenario unfolds where sustainability concerns have been neglected for a long time, sometimes prompting the government to take drastic action to protect resources.

Dealing with resource shortfalls: Logging bans and redundancy

Logging bans and restrictions on harvesting have been introduced to a varying extent in countries around the world. The box below on logging bans in the Asia-Pacific region describes some of the most drastic examples, but the problem exists elsewhere too, albeit on a more limited and local scale. Once this point has been reached, the supposed choice between "cutting trees or cutting jobs", generally a prelude to a call for business as usual, is unlikely to be very helpful.

Box 6.1
Logging bans in the Asia-Pacific region and decent work

The problem

The logging bans and other restrictions on forest harvesting that have been introduced in a growing number of Asian countries have been primarily motivated by a concern that forest harvesting leads to deforestation, but also by a range of other preoccupations. These include the loss of biodiversity, the deterioration of watersheds, forest damage due to inappropriate logging, abuse of contractual obligations, illegal logging, uncontrolled migration and conflicts with the rights of indigenous peoples. Criticism is not limited to illegal practices, but asserts that conventional harvesting can generate significant social cost. The verdict on the forestry sector is strong:

> These issues and concerns suggest that forestry has failed to meet the changed demands and expectations of today's society (FAO/AFPC, 2000a, p.112).

So are the consequences:

> Together with ineffective and inappropriate management practices and wasteful utilization, problems of land use and timber harvest abuses have persisted and grown to levels now deemed politically and socially unacceptable in many countries (idem, p. 116).

The previous equation of forest use with timber production is now considered inappropriate and unbalanced. It is now commonly assumed that halting logging is both a necessary and sufficient means for avoiding or minimizing the negative consequences of forest industry activity. In the future, forest industries are thus likely to face greater difficulties of access to resources.

The efficacy of bans

Experience with bans is mixed. While there has been some success in conserving forests, the widespread lack of effective protection continues in the region. Bans have also had adverse economic and social effects, including on the production, trade and consumption of forest products. Moreover there have been important, sometimes disruptive effects on neighbouring countries through both legal and illegal trade and market disruptions.

While bans may be a necessary first step in certain cases, they do not work in isolation. The goals of bans are rarely articulated in operational terms. They generate very sudden change for all involved, and stopping logging, rather than achieving conservation, tends to become the operational objective – and the measure of success. Poorly implemented bans can contribute to more deforestation and degradation including in neighbouring countries.

There is also ample evidence that bans have unintended social impacts, including the loss of employment, declines in community income, disruption or dislocation of local households and – often as a counter-reaction to these – an increase in illegal harvesting. Political decisions have rarely been accompanied by detailed analysis of potential impacts, the magnitude of which have tended to become apparent only once they were experienced.

Strategies and solutions for social impacts

Governments are often caught in the middle between industry and other interests. While there is no single approach that will work in all situations, a number of principles should be adhered to. These include:

- recognizing the real cost of conservation management and building consensus on how it is to be shared;
- recognizing and understanding local dependency and actively involving local people in decision-making about forest management;
- providing "safety nets" for those most affected economically and socially, including compensation and other forms of transitional social security, as a precondition for the fair sharing of the cost;
- seeking greater involvement and participation by the private sector in finding solutions for conservation management.

Source: Based essentially on FAO/AFPC, 2000a.

Whatever the circumstances and merits of the forest protection measures put in place, the impact on workers in an industry suddenly deprived of its raw material base can be devastating. This is particularly true in developing countries, where few alternative employment opportunities exist in rural areas. Even in regions with very low unemployment like the Pacific north-west of the United States, those losing forestry jobs may not be well placed to enter buoyant sectors such as information technology or aircraft manufacturing.

In China, the Government has acted along the lines of the recommendations emerging from experience in the Asia-Pacific region. It acknowledged the social cost, identified those affected, devised a social safety net, and tested the measures, before proceeding with the introduction of far-reaching restrictions on forest harvesting in 2000. US$11.6 billion have been made available to implement the programme, which includes alternative livelihoods for the more than 1.2 million workers who will lose their old jobs. This large group is to be absorbed through a combination of early retirement, relocation to other forestry jobs, and redeployment to other government institutions or to self-employment (*China Green Times*, 8 December 2000). Such an approach should become the rule for dealing with redundancy on a significant scale.

One way of avoiding a resource impasse like a logging ban is to invest in the development of new resources. As noted in Chapter 3, this has been happening on a large scale but, as Chapter 5 shows, not always without social problems.

The expansion of resources through plantations

The IFF proposals for action acknowledge this situation and urge governments and industry to promote the maintenance and enhancement of forest resources, including through plantations, taking into consideration the social, cultural and environmental impacts and economic costs and benefits.

A growing number of forestry firms are heeding this advice and attempting to accommodate social concerns at the planning and design stages of their projects. Forestal Oriental in Uruguay is an example of this proactive approach. The company's operations manual requires developers when designing a scheme and again when actually acquiring land "to satisfy themselves that there are no social or cultural obstacles which could obviously become unmanageable, and that both the plantation and the regeneration have local and national political backing" (Forestal Oriental, 2000b, page 1).

According to the operations manual, staff are also required to assess environmental impacts and to carry out a public consultation for which they must actively seek out those who might be affected. They are encouraged to obtain the support of local civic organizations as well as of local government. As part of its normal operations, the firm commissions inquiries through social scientists to track the opinion of its neighbours and local communities and to spot any emerging grievances or opportunities.

In both Australia and New Zealand, government and industry have concluded forestry accords with the local population after extensive discussion and public debate backed by special inquiries and research into controversial aspects. In addition, forestry companies are making efforts to be good corporate citizens. A group of forestry firms in Tasmania, for example, has published a *Good neighbourhood charter for commercial tree farming in Tasmania* (Tasmania Charter, 2000). In the development of tree plantations on agricultural land, the Charter commits firms to take account of community aspirations and issues in planning and to carry out negotiations with honesty, integrity and in a transparent process. The forest practices code is to be applied in plantation management and the firms will negotiate and/or share costs arising from fencing, damage from shading and loss of landscape values, as well as providing fire protection. Even after the plantations have been established, the public is offered access to information, timely consultation on operations and ready access to responsible staff.

An approach along the lines of the above example would have gone a long way towards averting the conflicts described in Chapter 5 that have beset some of the plantation areas in Chile. As has been noted in the case of Fiji, creating the conditions for local people to obtain gainful employment in plantations and downstream processing is also an effective way of sharing the benefits of industry development and winning local support.

Under some circumstances, the local population is not willing to give up its land, even though the returns from agriculture are meagre. The reason may be economic, cultural or legal. The latter is the case with the Mapuche indigenous peoples in Chile, who are not allowed to sell the land that is recognized as indigenous. Encouragingly, forest industry firms in a growing number of countries have been dealing creatively with such situations and devised mutually beneficial partnerships.

A recent review of some prominent cases traces back such partnerships to mounting political pressure for local control and to globalization (Mayers, 2000). The earliest example is probably the PICOP out-grower scheme in the Philippines

started in the 1970s. It has since spread to South Africa, Australia, India, Brazil, Thailand and China among others. In several countries the schemes involve tens of thousands of hectares of very productive plantations. The biggest in terms of number of participants may well be in China, with more than 600,000 farmers involved in Szechuan Province (Mayers, 2000). These partnerships require effort to design and perseverance to maintain but can work to the advantage of both firms and communities. Some schemes that started as gestures of social responsibility turned out to be quite lucrative for the firms.

Such schemes look set to spread further. According to an estimate in Brazil, an additional 20,000 low-income families could be integrated into such schemes, if regulations were adapted and credit facilities made available (SBS, 15 March 2001). Investments derived from carbon offset mechanisms might provide an additional boost, even though transaction costs for involving smallholders may be prohibitively high.

Out-grower schemes and similar partnerships are no panacea and do not always benefit the poorest, as land is an important limiting factor. As noted by Mayers (2000), markets currently and increasingly reward the short-term behaviour that policies and laws permit. Governments are therefore often needed as regulators and brokers. Safeguards in the form of genuine local participation, clear criteria, transparent procedures and social impact assessments to monitor the outcome would increase the likelihood of benefit to both industry and locals. This includes the design of government incentives to enable them to be used readily by smallholders. Where smallholders are encouraged to carry out the work themselves, provisions for adequate training and guidance on safety and health are vital. If carefully designed and implemented, such schemes clearly have potential for socially beneficial forest industry development.

6.4. Developing and maintaining small enterprises and value-added production

Social and labour concerns are an important part of enterprise development. Six years of discussions within ITTO on policies and measures toward the development of domestic further processing of tropical timber have yielded 28 principles to be borne in mind by decision makers in governments and industry. They are organized in five groups, two of which come under the heading of decent work:

- improving the investment climate;
- wood supply and utilization;
- development of trade;
- environmental and social aspects;
- improving productivity.

The principles concerning social aspects address socio-economic benefits and safety considerations. Those related to productivity emphasize qualifications,

training and small enterprise development (ITTO, 1998b). These principles apply, *mutatis mutandis*, in all countries. They are also relevant in small enterprises, be they forestry contractors or downstream manufacturing businesses.

Good practices in forestry contracting

Problems with forestry contractors exist in all countries. The emergence of bigger firms and the presence of multinational enterprises has introduced or accelerated the trend towards outsourcing. On the whole, there are more commonalities than differences between countries concerning the difficulties and the ways of overcoming them, even though the order of priority may vary. Numerous initiatives have been launched in an effort to overcome the constraints and shortcomings associated with contractors. Between them, the experiences and lessons learned in the various countries provide a useful guide to good practices. They are described in more detail in a forthcoming publication (ILO, 2001).

A vision for forestry contractors

A vision for contractors would include the following elements:

- contractors are competent enterprises capable of rendering high-quality service at competitive cost;
- they owe their efficiency and competitiveness to specialization in equipment, skills, and work organization;
- they are capable of continuously developing better work methods and of adapting to new requirements;
- they offer attractive workplaces with competitive pay, stable jobs, good working conditions, including safe and healthy workplaces, as well as opportunities for organization, social dialogue and collective bargaining.

Turning this vision into a reality for a large proportion of forestry contractors requires contributions from and cooperation between all the major actors, namely:

- the contractors and their organizations;
- employees and workers' organizations;
- subcontractors;
- forest owners;
- the forest industry;
- regulators and inspectors in government and social security.

A series of complementary measures and arrangements needs to be put into place at the different levels relating to:

- the legal and institutional framework;

- the individual contractor enterprise;
- the relationship between contractor and principal or commissioning party;
- the relationship between contractor and subcontractor.

The legal and institutional framework should:

- clarify the status of a contractor;
- spell out the prerequisites for contractor firms;
- promote fair competition.

In the forestry safety regulations that recently came into force in Uruguay, after extensive tripartite consultations, a clear distinction is drawn between employees and contractors. The former are liable in the event of an accident. The problem is generally the lack of defined status for contractors, in particular for the self-employed. In order to clearly separate both situations, the regulations establish a register of contractors maintained by the labour inspectorate. A contractor duly registered will assume all liability for those working on site. Any person with a contract for services not included in the register will be deemed to be an employee of the commissioning party (RoU decree, 1999).

Similarly, legislation in France maintains a "presumption of employment" unless a contractor is registered as a commercial enterprise, is affiliated to a social security agency and holds an official waiver of the presumption. Applications are considered by local committees with industry representation. While this regulation has been effective in promoting professionalism among contractor firms, there is a continuing problem with the largely undefined status of "forest user" ("exploitant forestier" in French), which allows firms that have no recognition – including some that have failed the above test – to operate as contractors (Cugnet and Depraz, 1997).

Some countries have attempted to clarify the status of contractors through voluntary agreement rather than regulation. An example is the Netherlands, where an industry-wide agreement was reached by forest owners, forest industry and contractors to use only the services of contractors which are members of the contractors' association. The association in turn undertook to establish selection criteria for its members and to monitor compliance. Making this agreement work has taken many years. For several years after it was concluded, some forest owners and industry firms undermined it by hiring cheap, informal and sometimes clandestine contractors (Staudt, 1996).

Authorities or other organizations can also play an important role by providing independent information and assurances to the commissioning party. In Chile, forest industry firms have elaborate internal regulations and monitoring systems for their contractors. These are part of the agreements the contractor has to sign. They include the obligation to produce a certificate from the labour inspectorate that the contractor has not been found to violate employment and safety regulations. Another vital, if difficult, function is the control of illegal operators who are moonlighting or using undeclared workers or clandestine migrants. Others drift in

and out of contracting, going bankrupt without meeting their obligations to commissioning parties and workers, only to set up shop again under a new name. Such free-riding contractors, or "cowboys" as they are called in some countries, are unfortunately fairly common. In France, the labour inspectorate has joined forces with the regional contractors' associations to crack down on such practices (ILO, 2000).

The contractor firm

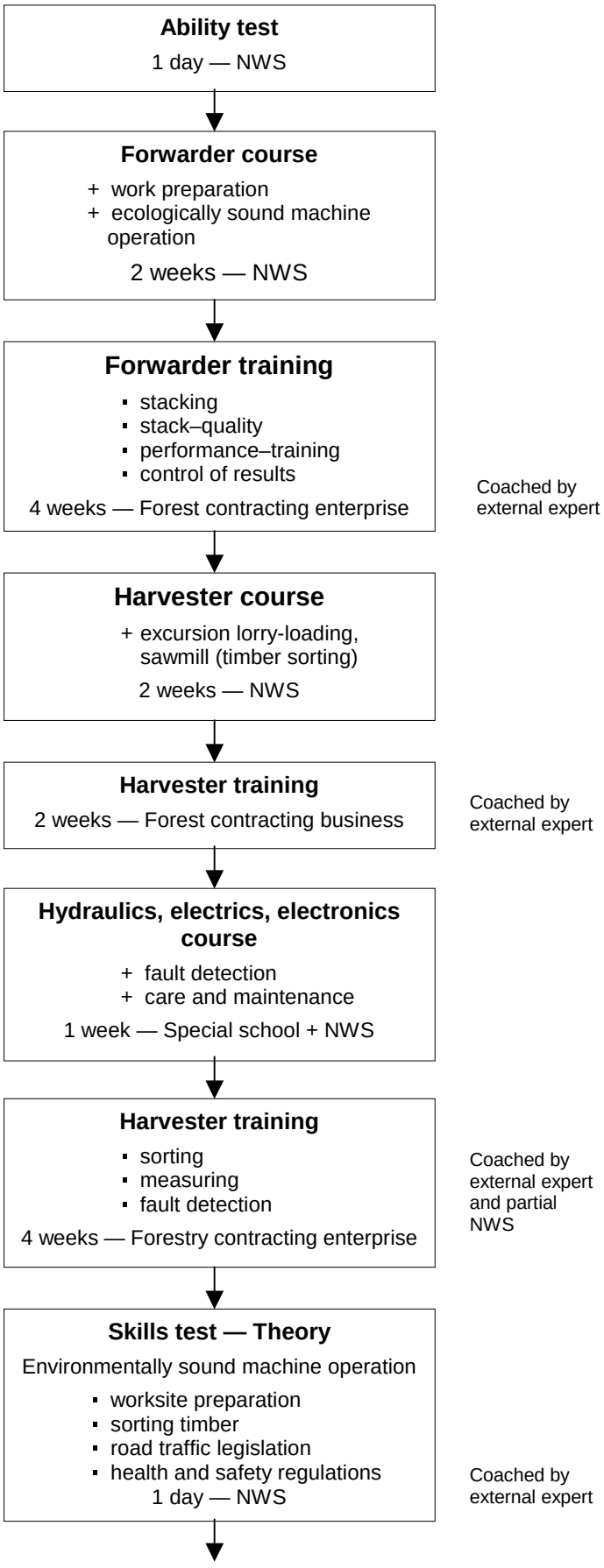
Contractor firms should have:

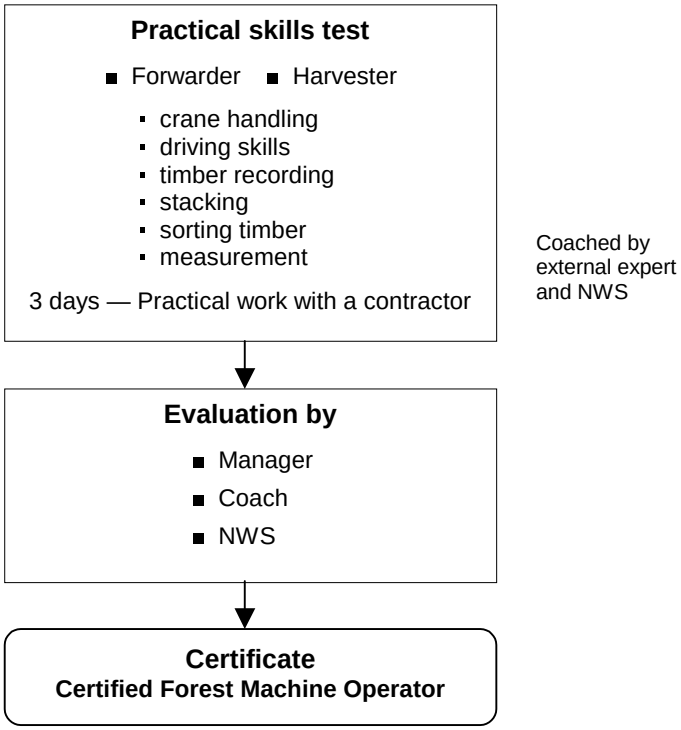
- formal recognition as an enterprise;
- competent management;
- skilled personnel;
- adequate equipment;
- sufficient working capital;
- quality management systems;
- safety and health management which can be integrated with the above;
- employment contracts with their employees, preferably based on collective agreements;
- support from a contractors' association.

The importance of these things has been recognized in, inter alia, the ILO code of practice on safety and health in forestry work (ILO, 1998a). A contractor firm's ability to meet these requirements will to a large extent be determined by the business environment: maintenance of fair competition and a partnership, rather than dependent relationship, with their clients.

Contractors often lack competence on the business administration and management side, rather than in technical forestry know-how. Some moves have been made to adjust the training offered and also to adapt the provision of training more to the needs of contractors. Results have been mixed and more effort is needed in this field (FAO/ECE/ILO, 1998). One example of a training module for machine operator training that has been developed jointly by a government training centre and a contractors' association in Germany is shown in figure 6.1.

Figure 6.1. Scheme for 16-week machine operator course at the Forestry Training School (NWS) Münchehof in Lower Saxony, Germany





Skills testing and certification has proved to be a very flexible and effective way of defining skill needs and matching skills with job requirements. In countries with a long tradition of vocational training, they are often part of the apprenticeship system, but even here, skill certification is useful for the ones who have not gone through the normal training system. Where formal training is relatively new, skill certification can be tailored to prevailing conditions. Good experiences are reported from industrialized countries such as Canada (Conners, 1997) and the United Kingdom (Ramsey and Green, 1996). Following the introduction of chainsaw operator certification in the early 1990s, the United Kingdom has pioneered certification for advanced forestry machines such as harvesters and forwarders. It is worth noting that the responsibility for coordinating this effort lay with the contractors' association. Forest owners, government and trade unions participated actively in the formulation of the standard (Dewar and Course, 1998).

More recently, skill certification has been introduced on a significant scale in the United States (Garland, 1999). The approach has been adapted successfully to a number of developing countries including Fiji and Zimbabwe (ILO, 1997c).

Quality management systems have been developed with and for forestry contractors in a number of countries. These include the "green card" in Sweden (Omberg, 2001), a quality label in Germany (Gabriel, 2001) and an adaptation of ISO 9001 and 14000 in Finland (Eeronheimo,1999). In all cases, the systems serve a dual purpose of diagnosis and performance improvement and communication of quality standards to others, in particular customers. In Sweden, the implementation of the systems has emphasized the participation of employees and stimulated cooperation rather than competition between contractors. Safety and health management as described in the ILO code of practice on safety and health in

forestry work can be integrated easily with general quality and environmental management systems.

Collective agreements for employees of contractors continue to be the exception rather than the rule in most countries. There have, however, been successful negotiations between contractors' associations and trade unions in recent years. A regional German contractors' association has had agreements with the trade unions since 1991. For the trade unions this was a departure from an earlier strategy to reverse the trend towards contracting. The contractors see the collective agreement as a sign of their status as normal, respectable employers. National collective agreements for forestry contractors are also in force in Switzerland, Finland, Norway and Sweden (ILO, 2001).

Contractors are mostly small businesses with limited capacity. Contractors' associations can play a vital role in providing support services as well as representation for their members. An ILO survey found that some 20 contractors' associations exist in Europe. They offer a wide range of services to their members, including technical and business advisory services, marketing, training, research and development, introduction of quality management systems, favourable rates for products and insurance cover. Rather unique approaches and solutions are found in individual countries, but no mechanisms were found to exist for sharing experience and transferring know-how. In order to take advantage of synergies and cooperation, the European contractors' associations last year founded a European Network of Forest Entrepreneurs (ILO, 2001).

Because of these benefits, organizations of contractors should be promoted by contractors themselves and other actors, in particular government and industry. In the United Kingdom and recently in Uruguay, the forest owners played an important role in setting up contractors' associations.

Contractors and clients

The relationship between the contractor and the commissioning party should:

- be the result of a selection that is not based only on price, but values quality and competence and ensures compliance with environmental and labour obligations, in particular concerning safety and health and social security;
- clearly establish roles and assign responsibilities;
- apply the same standards for contractors as for their own employees with respect to training and safety and health;
- provide for the monitoring of compliance with contractual obligations and sanctions;
- aim at maintaining stability in work volumes that allows contractors to invest.

These points are echoed in a summary of experiences with contracting in Brazil by a representative of the Brazilian Pulp and Paper Industry Association (BRACELPA). Where unrealistically low prices are accepted, contracting can

considerably reduce the quality of life of rural people. The main conditions for success are: a selection based not on price, but on qualifications and management capacity; and the financial autonomy of the contractor. Quality and compliance with social obligations need to be monitored. The BRACELPA representative recommends stability through medium- to long-term contracts, a preference for local contractors, and assistance with training and investment by the client. For their part, contractors need to develop systems to prove technical competence and compliance with social and environmental requirements (Barboza, 1999).

Similar guidelines have been incorporated by ILO constituents into the ILO code of practice on safety and health in forestry work (ILO, 1998a) and applied in forestry firms. For example, the Forest Enterprise in the United Kingdom has introduced clear provisions into its contracts concerning safety and health obligations, the monitoring of compliance and sanctions in case of violations.

Also in the United Kingdom, the Health and Safety Executive, together with industry and contractors, has developed a framework for managing safety and health in commercial forestry operations. The framework sets out the key tasks and clarifies how they are assigned to those involved. It helps those concerned to identify their role and responsibilities in the different configurations of contracting that occur. Two examples of the way safety and health roles and responsibilities are assigned are shown in figure 6.2 below.

Everyone involved in forestry work has health and safety duties and responsibilities. Contracting involves a variety of actors in differing configurations which affects the roles they need to play in the protection of safety and health. The figure shows two examples of this. Only those shown in lighter shading actually work on the site. The roles of forestry work manager, contractor and subcontractor fall to different parties depending on the arrangement. Clarity about the respective roles is critical for the safety of operations.

Development of processing enterprises

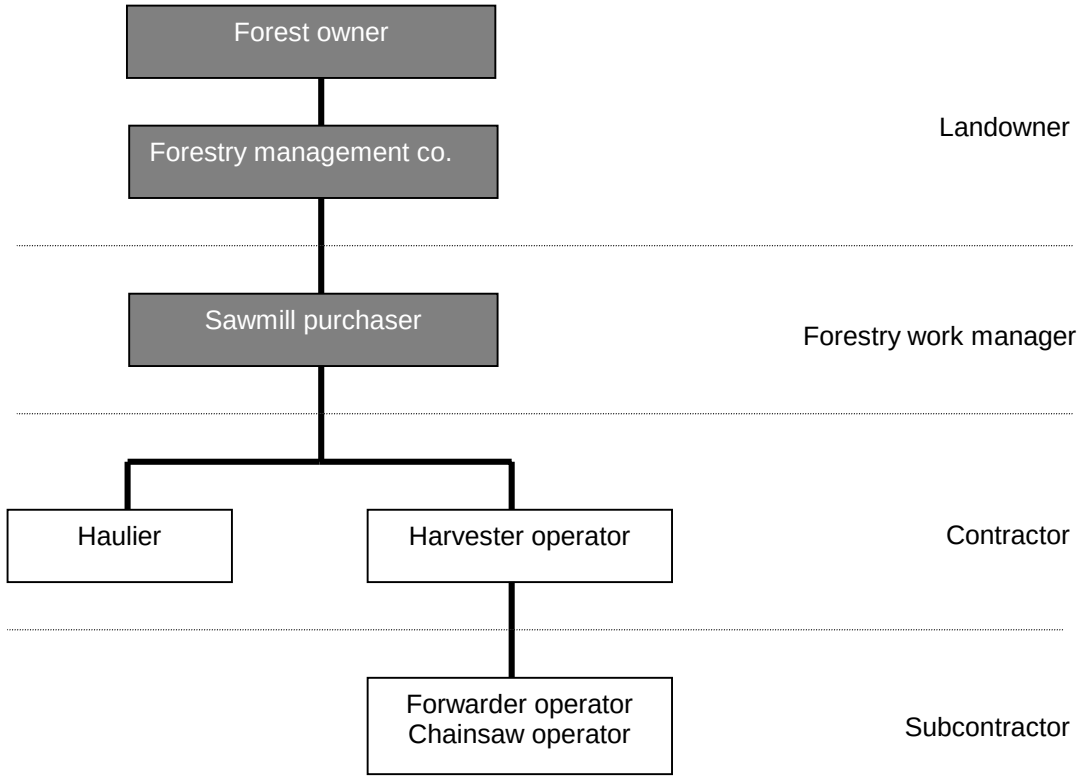
Globalization has led to much higher exposure to competition. The pressure is often highest for the small and medium-sized firms that constitute the bulk of the sector. The disappearance of such firms has a particularly strong impact on employment, as they have the highest intensities of employment per cubic metre of wood or per dollar of turnover. A successful adaptation of these firms to globalizing markets and production chains and to the requirements of sustainability is thus crucial for maintaining many of the socio-economic benefits of the sector.

For individual firms, regions and countries, improving value added through further processing is widely seen as an essential part of a strategy to increase overall returns, profit margins and employment opportunities. A wood industries specialist in British Columbia puts it like this:

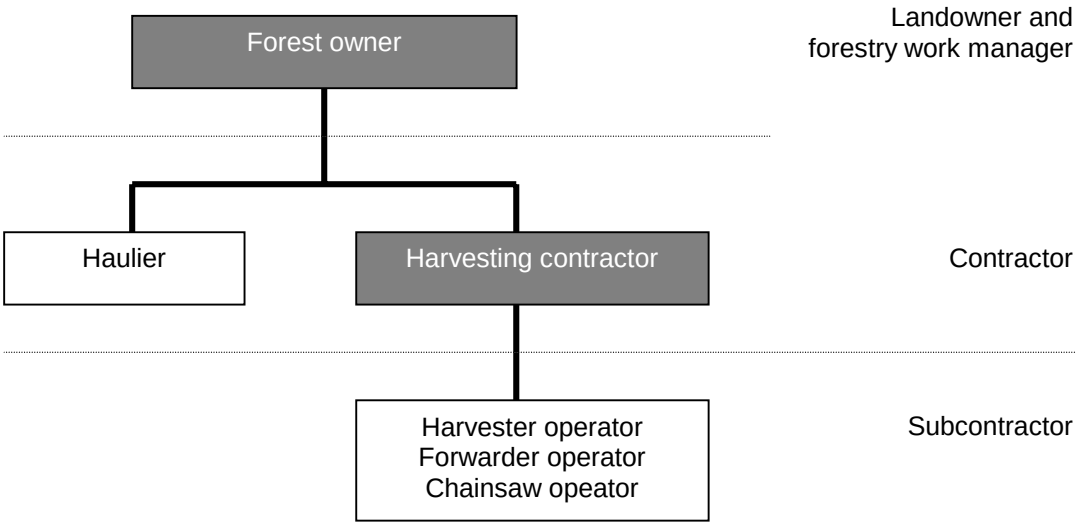
> Open markets, production factor mobility and international institutions and production efficiencies are increasingly intolerant of national and regional development or employment objectives. Hence the interest of governments in the more labour-intensive secondary manufacturing industry (Wilson, 1996).

Figure 6.2. Safety and health roles and responsibilities under contracting arrangements

Example A – "Standing sale"



Example B – "Direct contracting"



Small and medium-sized enterprises can adopt a variety of strategies. Building components manufacturers in the European Union, for example, have endeavoured to:

- specialize and focus on local markets;
- concentrate and develop mass production;
- rely on specific technological properties (EU, 1997).

Under the first option, proximity to the customer can enable them to turn the apparent disadvantages of their small size and ties to a locality into positive assets, through customizing, just-in-time delivery and after-sales services. In another threatened segment, the wooden containers industry, the strategy has been to rationalize and automate, customize, recover and recycle (EU, 1997).

In the search for a role model for a thriving industry in general and for small firms in particular, attention has turned increasingly to two related concepts, namely: industrial districts and "clusters". Industrial districts were noticed some decades ago as intriguing examples of geographical concentration of firms producing similar products. The best known examples for the wood industries are the Italian furniture making districts. Within these districts, small and often very specialized firms have built networks of informal and shifting cooperation to take advantage of synergies in developing and manufacturing specific products. This enables them to take on projects that would be far too complex and orders that would be far too big for individual firms. Proximity, trust, close contacts with clients and cooperating firms are all critical ingredients for the success of such a strategy.

The notion of the "industry cluster" is more recent. It refers to a tissue of raw material sources, manufacturing industries, suppliers and equipment manufacturers and related services including public sector institutions. Forestry and wood industries clusters have been described for a number of European countries, including Austria, Finland, Germany and Italy (Hazley, 2000, and Inno, 2000) as well as for North America (Braden et al., 1998). They also exist or are emerging in a number of developing countries, even if they are not called clusters. Brazil and Malaysia are examples of countries with big forest industries that can increasingly rely on local machine manufacturers, researchers and specialized services.

The existence of clusters can create synergies that feed back into additional growth and development in positive feedback loops. Most of these clusters have emerged spontaneously and often over long periods – as much as 500 years, as some have claimed for Finland (Lammi, 1996). The question is: can cluster development be induced and accelerated? If so, how and by whom?

A growing number of governments and firms have concluded that the answer to the first question is yes, and the answer to the second should be sought through social dialogue and alliances. Examples from Sweden and Brazil are described in boxes 6.2 and 6.3, but the concept is actively pursued in other countries as well, including Austria, Canada and Finland (Inno, 2000). These programmes are typically coalitions of government and the private sector, including workers' organizations. Their aim is to remove bottlenecks and stimulate potential in the

value added chain and its support structure through a series of usually tailor-made and complementary measures. These typically include:

- improvement of information flows;
- targeted research on products and processes;
- access to credit and venture capital;
- human resources development.

Box 6.2
Small enterprise development in Sweden: Industrial development centres (IDCs) for the wood industries

The concept

For some regions in Sweden, the wood industry plays a very important role in terms of employment and municipal revenues. In order to strengthen this industry, the Swedish Government decided in June 1999 to establish a number of industrial development centres (IDCs) located in traditional wood industry regions throughout the country.

IDCs have been launched in a range of sectors since 1996 by the Swedish Ministry of Industry and Trade in collaboration with industry and trade unions. The idea was to establish networks in order to share knowledge and experiences, as well as creating contacts to stimulate business and product development, thereby strengthening competitiveness and increasing growth rates.

The main function of the centres is to promote regional industry by initiating and supporting projects such as product development and training. The IDCs can allocate venture capital, provided that the projects are carried out on a purely commercial basis, are self-financed and have a broad ownership among the companies in the region. The Government is contributing 25 million kronor (US$2.5 million) to this pilot project over a three-year period.

The three main activities performed by the centres are: scanning of project ideas with the aim of identifying business opportunities; product development projects; and feasibility studies/projects. Support and consultancy provided through the programme focus mainly on activities such as skills and competence, products and production, technology, marketing, information technology and communication, certification, business development and financing. The IDCs also provide a good platform for networking which contributes to improved coordination between wood and wood-related manufacturers on issues such as raw materials, subcontracting, production, transport and logistics and marketing activities.

The centres are based on a shareholder structure which gives regional manufacturers the majority of shares and seats on the board of directors. One-third of the participating firms have to be small enterprises and no more than one-third may be large enterprises. Today, there are 855 shareholders in IDCs in all sectors. Of that total, 70 per cent are small enterprises (<50 employees), about one-fifth are medium-sized and large enterprises, and the remainder are institutions such as trade unions, municipalities, chambers of commerce, banks, universities, etc.

Reactions and early experiences in the Dalarna IDC

Overall, the IDCs scanned more than 6,000 project ideas between 1997 and 2000. One in every six ideas is pursued through product development and half of these reach the point where they are ready for implementation. While it is too early for an evaluation of the approach in the wood industries (only 18 months after the launch), some achievements and positive feedback have been recorded.

In the Dalarna IDC, in central Sweden, a study initiated in 1999 led to the establishment of a wood particle factory (for details, see the web site of Scandinavian Wood Fiber AB, http://www.woodfiber.se) in the town of Orsa. While it is well established in the United States, the use of wood particles in the composite industry is relatively new in Europe. Wood particles are a very competitive product because the raw material is no more expensive than competing materials such as plastic, but comes from a sustainable and renewable resource. The new factory is the first of its kind in Sweden. It employs six people and has very strong potential for further expansion.

The Dalarna IDC focuses on industries manufacturing wood and steel products. In searching for synergies between these, product development has been initiated to combine steel and wood in construction components such as beams.

As regards international networking and business development, the Dalarna IDC has recently started a project that aims to bring French, Italian and Swedish manufacturers together in order to find business opportunities. Study tours have been arranged in both directions, something the individual firms would have been unable to do. As a first result, a floor manufacturer and a manufacturer of wooden interiors are now preparing offers. French visitors have shown interest in bio-energy technology seen in Sweden.

Self-made networks

Cooperation has also developed spontaneously in some regions. Hedlunda Snickeri AB, in the town of Lycksele in northern Sweden, is a very successful maker of furniture components and one of the many suppliers to the furniture giant IKEA. The firm started 17 years ago with six employees and today they have grown to 65 employees and a turnover of about US$25 million. Besides being a well-managed company, it has been taking advantage of the possibility of cooperation with other firms to utilize spare capacity or to cope with temporary peaks in demand. Some of these arrangements have become permanent, and Hedlunda Snickeri currently engages seven suppliers under subcontracts.

According to owner-manager Dick Bergh, networks are indispensable for small and medium-sized firms to utilize machine capacity efficiently and to avoid unnecessary investment. The networks could be made even more effective if the firms were linked via an intranet through which orders and requests from customers could be channelled, along with information on the current utilization of capacity. If networks were extended to include government bodies as well, information about the existing structure and capacity could inform decisions about supporting new investment.

The forest and wood workers' union has welcomed the government wood enterprise development project, because it sees a big potential for an increase in employment in rural areas where the wood industry traditionally is located. Skills development through the project is expected to strengthen the position of trade union members in the labour market.

Source: SIA, 26 Aug. 1999

Box 6.3
Promoting the development of wood industries in Brazil

The furniture district of Santa Catarina

Wooden furniture is seen as one product with significant growth potential in Brazil, both for domestic and export markets. As in other countries, the furniture industry consists largely of small and medium-sized enterprises. In Brazil, they are concentrated in six regions in various parts of the country. The biggest concentration is found in the southern State of Santa Catarina, where the industry has been growing rapidly over the last decade and accounts for over half of national furniture exports.

The competitive edge has so far mostly resided in low-cost raw material and labour. According to local analysts, further growth will require the development of new comparative advantages. A benchmarking exercise comparing local standards with international ones yielded the following picture:

International benchmark (Italy, Germany, Taiwan (China))	Local standard (sample of firms in Santa Catarina)
Firms specialized in certain elements of the production chain with extensive subcontracting relations	High level of product diversification and depth of manufacturing with little subcontracting
High levels of interrelations between firms (competitors, related enterprises, suppliers) with intense collaboration	Few relations with competing and related enterprises
Presence and integration with machine and equipment manufacturers providing sector-specific technology development	Loose contacts with machine and equipment suppliers and dependence on imports
Close and collaborative relations with a few suppliers	Purely commercial relationship with large number of suppliers
High productivity and quality with advanced design	Low productivity, quality deficits and simple design

The high level of vertical integration in relatively small firms means that many stages of manufacturing take place on a scale that is not economical. Specialization and a division of labour would help all those involved. It would open a way to survival to the smallest firms, which cannot improve all stages of production in order to remain competitive, and it would help the bigger ones to focus on the quality, design, finishing and marketing of their products.

Apart from than better integration along the value added chain in the form of vertical and horizontal networks, the most efficient measures to strengthen the sector would be:

- programmes to improve quality;
- upgraded technology, including through access to credit;
- intensive training and human resource development.

One of the main reasons why few initiatives had been taken to foster cooperation was a lack of communication. The actors in the sector displayed marked differences of perception and opinion with regard to the strategy to adopt and as to who should take the lead (government or the private sector).

The need for dialogue has been recognized by the Government, which launched a competitiveness forum for the forestry and wood industries in 2000.

National competitiveness forums

Based on the contention that international competition is between national value added chains, the national Government has been establishing competitiveness forums for 12 individual value added chains, including the forestry, wood and furniture industries, since the year 2000. The objectives of the forums are:

- generation of employment, self-employment and income;
- productive development of regions to reduce inequalities;
- technical training;
- increasing exports, competing more effectively with imports and international services.

The forums provide opportunities for tripartite dialogue in the search for a consensus about a diagnosis of the situation in each sector, taking into consideration the bottlenecks, opportunities and challenges it faces. In a subsequent stage targets and programmes are defined jointly. The consultations culminate in the conclusion of a "contract for competitiveness" which commits all parties to shared responsibilities and channels public support. The function of the forums then becomes one of continuous monitoring and review.

The forest industry forum was launched only in December 2000 and is still in the early stages of development. It has so far completed a diagnosis and drawn up a draft agenda and programme including 17 specific projects in the areas of resource development, certification, promotion of competitiveness with heavy emphasis on training and quality improvements for export. One of the issues that has surfaced in the discussions so far relates to raw material supply for furniture makers. Most plantations are owned by large pulp and paper or panel makers. Until recently, sawlogs were fed into local markets. Lately the companies have opened sawmills producing for export. Furniture makers perceive this as a threat and have called for bans on such exports.

Source: Based largely on BRDE, 1998, and MDIC, 2000, 2001.

In Malaysia, the adaptation of the ILO Work Improvement in Small Enterprises (WISE) programme has had very encouraging results. The programme is very flexible in that it helps to develop measures geared to the circumstances of individual firms. It also permits the identification of low-cost measures with high returns in terms of improved productivity and working conditions (Ho, 2000).

A major part of all these efforts is directed at raising awareness, enhancing information flows and establishing contacts between often rather isolated firms, with a view to building trust and cooperation. Some initiatives, like the Brazilian competitiveness forums, also address structural problems and ways of creating a supportive environment, in particular for small enterprise development.

Most of the projects referred to are still recent and it is too early to judge their outcomes. Experience in Austria, Finland (Inno, 2000) and the United States (Braden et al., 1998) suggests that, while they require entrepreneurs to make them emerge and grow, governments can nurture industrial districts and clusters. The potential of the approach should not be overstated, as experience in Sweden shows, otherwise credibility and willingness to cooperate can be jeopardized by unrealistic expectations (Inno, 2000). In the case of British Columbia, where such efforts have been under way for some time, Wilson (1996) cautions that, while there is potential for secondary manufacturing and conditions are favourable, the scale of growth cannot be expected to offset labour displacement resulting from reduced timber access, productivity gains and structural change. However, if expectations can be kept realistic, these programmes can make a useful contribution and help firms to remain or become competitive and sustainable businesses.

Skills

Skills and human resources development are mentioned time and again as key elements for a successful adaptation of forest industries to globalization and sustainable development. For example, a European Union report on competitiveness of the wood industries concludes that "attaining, maintaining and improving a competitive edge depends increasingly on the availability of skilled human resources" (EU, 1999). Likewise, the FAO's *State of the world's forests* report points to human resources development as one of the most urgent needs in responding to sustainable development requirements and the changes in global demand and supply for forest products (FAO, 1999). While human resources development is a vital objective for firms of all sizes, it is usually harder to accomplish for small and medium-sized businesses.

In the search for suitable approaches to skills development, very similar conclusions are being reached around the world: skills should become "portable", i.e. recognized among enterprises, ideally throughout a country like South Africa (Hall and Miller, 2001). This would require more standardization of training and certification of trainees and trainers. Successful examples exist in a number of countries, as indicated earlier in connection with contractors. ILO experience also suggests that transfers from one country to another are often possible.

In order to ensure that the training imparted is geared to real jobs, skills profiles have been drawn up through field surveys, relying to a large extent on the experience of workers themselves. As Rachue (1996) emphasizes, the real experts are the people in the field. The European experience with design and delivery of training is similar: "It is clear that the involvement of both sides of the industry in the design and implementation of training measures would help to increase their acceptance and make them more efficient" (EU, 1999).

The above provides direction concerning training objectives and the design of suitable schemes, but how could it be funded? It is often argued that developing countries lack the resources to establish effective training systems and institutions. The FAO (1999) suggests that in countries with a substantial industry, the problem could easily be remedied by more realistic pricing of raw material and better rent capture by governments. Both measures would of course hugely contribute to

improving sustainability, even if the proceeds were not invested in human resources development and in more efficient administration.

But is a lack of funding really the stumbling block? The experience reported in Chapter 5 suggests that even in developing countries the obstacle is not the availability of funding per se. Training funds often exist, but are poorly utilized by the forestry and wood industries, in particular by small firms. The need would therefore appear to be primarily for an understanding of the reasons behind this low uptake and for a better adaptation of funding mechanisms to potential users.

Training that is jointly designed by employers, workers and governments, based on realistic skill profiles, and leads to certified "portable" skills based on recognized skills tests, with funding from sources accessible to all enterprises, would go a long way towards a successful adaptation to the constraints and opportunities generated by globalization and sustainable development. It will work for the industry only if it manages to attract and retain competent people. As Chapter 5 shows this will require adequate pay and good working conditions.

A way of retaining skilled workers in the midst of fluctuating markets has been devised by a big kitchen manufacturer in Germany. After rapid growth between 1990 and 1995, the firm suffered a sharp downturn in workload. Management negotiated an agreement with the works council representing its employees to introduce flexible annualized working hours. A band of between 28 and 43 hours per week was introduced with a maximum deviation of -150 or +300 hours per year. The severe slump was compensated without lay-offs (*Holz-Zentralblatt*, 15 October 1997). This is a rather classic example of the benefits of social dialogue within enterprises. While this function and setting of social dialogue will remain important, the twin challenges of globalization and sustainable development have created a far greater need and many more opportunities for social dialogue, often in rather novel institutional settings.

6.5. Social dialogue in a globalizing and sustainable forest industry

Social dialogue for sustainable development

The debate leading to the adoption of the sustainable development concept has given a major boost to social dialogue in that it has come out strongly in favour of social dialogue and participation as both an end and a means, i.e. as an instrument for achieving a particular goal as well as a right. In this vein, the United Nations Intergovernmental Forum on Forests expects collaborative partnerships to play a key role in the implementation of the concept in the forestry sector. These partnerships will include, but not be limited to, governments, employers, workers, local and indigenous communities.

One area where the social partners should play a key role is that of establishing a full and coherent definition of the social aspects of sustainable development by integrating it with the concept of decent work. The mechanisms and tools being put in place to advance sustainable development in the forest industries offer a wide range of opportunities for doing so. They include:

- national forest programmes, which are to serve as the fundamental instrument for implementing sustainable forest management and for international cooperation;
- national and international discussions about criteria and indicators;
- certification schemes;
- the formulation of national codes of practice;
- efforts to ensure the sustainability of the resource base;
- dealing with rapid growth or decline;
- developing mechanisms for conflict resolution;
- communicating the policies and measures adopted in favour of sustainable development.

More and more of these opportunities are being seized. Some examples have already been cited earlier in this report, but there are many others. The European Union has advocated social dialogue and cooperation with trade unions and NGOs as a way of tackling the persistent negative image of the forest industries as tree killers and smokestack industries (EU, 1999).

Firms are cooperating with their employees to improve relations with local communities. Weyerhaeuser, for example, involves more than 95 local employee advisory committees to direct its substantial donations in favour of local communities (Weyerhaeuser, 2001, homepage, http://weyerhaeuser.com).

In many countries, the social partners have actively participated in formulating national forest programmes, as well as criteria and indicators, and in developing certification schemes. In the Netherlands, they have concluded a national accord for the procurement of sustainably produced raw material (van de Stadt, 2000).

Very targeted tripartite initiatives to link decent work with sustainable development include the adoption of the national code of forest practices for Chile by a tripartite commission in 1996 (CNTF/ACHS, 1997). The code integrates measures for environmental protection and the improvement of working conditions and skills. Similar, but broader, efforts are those described in boxes 6.3 and 6.4: the competitiveness forum in Brazil and the emerging national strategy in Uruguay.

Social dialogue should expand to seize these new opportunities and live up to the expectations of society for sustainable development in the forest industries. It should also expand to adapt to a globalized industry with emerging forest industries in new or growing producer countries and firms that increasingly operate across borders.

Box 6.4
A sectoral strategy for decent work and sustainable development at the national level: The example of Uruguay

One of the prominent features of globalization in the forest industries is the soaring share of timber produced in plantations of fast-growing tree species, particularly in the southern hemisphere. Uruguay is one country offering very favourable conditions for such plantations. Over the last decade, a government policy of incentives has attracted large amounts of national and foreign investment into tree plantations in a country where forestry had been almost non-existent. Harvesting levels will increase fivefold in the next few years to a level of 10-12 million m^3, mostly destined for export. Initially much of the export will be in the form of roundwood, but value added processing is likely to increase in the medium term and result in the establishment of a whole new industry.

The boom in forestry stands in stark contrast to other sectors of the economy. Manufacturing industries have gone into deep decline following the opening of markets. Cattle rearing, traditionally the backbone of the economy, is in a severe crisis, caused at least in part by remaining trade barriers for meat and other products. As a result, Uruguay has turned from a country of immigrants into one of emigrants with alarming numbers of young people leaving the country in search of economic opportunities. Making full use of the potential in the forest industries is thus vitally important. The challenge is to achieve decent work in a rapidly expanding sector driven by the global economy. Experience elsewhere shows that this is unlikely to occur spontaneously, but rather requires a sectoral strategy for decent work, implemented in cooperation between the government and the social partners.

The point of departure for the emerging strategy was an immediate concern with safety hazards in forestry as thousands of new and inexperienced workers entered the sector. The government suggestion to introduce specific safety regulations in order to prevent high levels of fatal and serious accidents found broad backing by employers and workers. Regulations were formulated and signed into law in December 1999 with ILO assistance and after extensive tripartite consultation. During the discussions, it quickly became clear that the goal of safe work could not be pursued in isolation from other components of decent work. Social protection, the nature of employment contracts, skills and working and living conditions are all preconditions for safe work and are therefore addressed in the regulations. The legal provisions concerning decent work in forestry will be buttressed by practical guidance in a broad national code of forest practices that will be introduced in Uruguay in the near future. A significant proportion of producers is also likely to seek the certification of their timber.

A particular characteristic of forest work is that most of it is carried out by contractors as a service to landowners and industry. In many countries, some of the worst conditions in forest work are associated with contract labour. In Uruguay, all ILO constituents agreed that low cost should be the result of highly productive operations by well-equipped contractors, relying on efficient work organization and a skilled workforce, rather than a cost-cutting strategy based on substandard conditions. The regulations clearly spell out responsibilities in contracting situations and establish a register of contractors with the Inspectorate of Labour. In an important step towards decent work in contracting businesses, a national association of forestry contractors has been founded. In order to enable adequate monitoring of the regulations which entered into force in December 2000, almost all labour inspectors have received in-depth technical training on safety in forestry work organized with assistance from the ILO.

In the coming years, other components of decent work will need to be addressed. Work is already under way to promote skills development through the creation of a vocational training system for forestry with a tripartite steering mechanism. Future activities could address the need to strengthen the social partners, in particular the organizations of contractors and workers, so that they can engage in effective social dialogue and collective bargaining. Forestry contractors around the world are small and medium-sized enterprises operating in a very competitive environment. Both the contractors and the emerging wood processing businesses stand to benefit from support for enterprise development. Multinationals could play a major supporting role in helping to disseminate some of the technology and good practices they have introduced. Applying such a multifaceted strategy, the forestry sector in Uruguay could well become an example of how globalization and decent work can go hand in hand.

Expanding social dialogue in a globalizing industry

One precondition for productive social dialogue is trust, based on reliability and continuity. As one human resources manager of a German furniture manufacturer with successful management-labour cooperation has observed, trust

lowers costs as it lays the basis for flexibility and innovative solutions (*Holz-Zentralblatt*, 15 October 1997). That trust is often missing.

Trade unions in North America for example have made allegations of dual standards practised by several European multinationals implanting themselves in North America. In their new subsidiaries, they do not maintain the positive attitude towards trade unions displayed in their countries of origin (*The PACEsetter*, July/August 2000). In several cases, trade unions have been forced to cooperate internationally to win recognition (*The PACEsetter*, January/February 2001).

But there are also encouraging examples. These include the agreements reached by some companies with trade unions and moves by governments to extend the coverage of social dialogue and collective bargaining. One of these is the productivity pact at Weyerhaeuser. It commits both parties to cooperation in productivity development and to the recognition of trade unions as partners (Weyerhaeuser, 2001, homepage, http://weyerhaeuser.com).

Other multinational firms have concluded framework agreements. Two examples are those concluded in 1998 and 2000 between IKEA and Faber-Castell on the one hand and the International Federation of Building and Woodworkers on the other. IKEA is one of the world's biggest furniture retailers, sourcing 90 per cent of the merchandise for its 160 stores in 30 countries from over 2,000 independent producers in 56 countries. Faber-Castell is the world market leader for wooden writing utensils and employs some 5,500 workers in ten countries.

Both companies recognize that customer trust is of paramount importance and have adopted strategies for sustainable production and procurement of wood raw material, including through certification. At the same time, they recognize that assuring decent work in mills where the companies manufacture or source their products is vital to their credibility. The agreements provide for compliance with the ILO Conventions covered by the 1998 Declaration, but also include provisions about adequate wages, working time and working conditions. The companies undertake to ensure that conditions in the mills are in line with the agreement. Observance is monitored by joint inspection visits. Joint missions to IKEA suppliers in four countries have concluded that significant improvements in working conditions have occurred at all mills.

Moves by governments to extend social dialogue include the European works councils created under a European Union directive (Council Directive 94/45/EC of 22 September 1994). They provide for councils with company-wide representation in firms with at least 1,000 employees within member States and at least 150 employees in each of at least two member States which are considered "Community-scale undertakings". The directive also applies to similarly defined "Community-scale groups of undertakings".

In South Africa, a relatively high unionization rate of 47.5 per cent did not in the past translate into a significant coverage for collective bargaining. This changed recently with the creation of a national bargaining council at the initiative of the Government (Hall and Miller, 2001). Extensive use was made of consultation and social dialogue in connection with the privatization of public forests. The workers of the state forest group SAFCOL had been employed under different pay and

benefit regimes, and some units had been heavily overstaffed. Through consultation, the varying interests were reconciled and a scheme negotiated that includes the options of transfers, severance packages for those wanting to leave or redeployment. The lessons learned underpin the importance of communication and trust. Joint management "roadshows" have visited plantations, the commitment of the parties has helped to overcome deadlocks, and trust has made flexibility possible (Bethlehem, 2000).

All ILO constituents have increasingly become proactive in dealing with the challenges of globalization and efforts to make the development of the forestry and wood industries socially sustainable. The best results have been obtained where several measures have been combined into coherent strategies, such as the one that is in the making in Uruguay (see box 6.3). Best practices are gradually taking shape and emerging from this wealth of often isolated efforts and experiences; this would appear to be fertile ground, something the forest industries have always known how to use.

7. Summary and suggested points for discussion

7.1. Summary

An industry on the move

Suggestions that the forestry industry has been "uprooted" (*The Economist*, 31 August 1996) are probably exaggerated, but there is little doubt that it is moving. The first type of move concerns the globalization of its markets and production chains. Globalization may have set in later and begun at a slower pace than in other sectors, but it has clearly been gaining momentum and looks set to continue, if the classical indicators are anything to go by.

International trade in forest products and furniture has far outgrown production over the last decade. Trade in forest products is now equivalent to 30 per cent of world output. Much of this trade is still within regions, rather than truly global, but world markets already exist for some products and seem to be in the making for others. An indication of this is given by the world market prices that have already emerged for some products and are being formed for others. Even import prices for a diversified product like furniture are showing a clear trend towards convergence. Finally, FDI in the forest industry rose sharply during the 1990s, in particular through multinational companies.

Closer international integration of firms and countries

The mechanisms through which globalization is occurring are fostering a closer international integration of firms and the forest industries sector of different countries. Trade is increasingly captive within firms that are linked through FDI or through subcontracting arrangements, including by original equipment manufacturers (OEMs).

The 1990s saw a rally in FDI, mostly directed at mergers and acquisitions rather than greenfield mills. The members of the "million tonners club" of pulp and paper producers from North America, Scandinavia and Japan have led the way, but there are newcomers, too. Small and medium-sized manufacturers of wood products and furniture have begun to go abroad. They tend to limit themselves to one or a few usually neighbouring countries, becoming transnational (TNCs) rather than multinational companies. Another new phenomenon is the emergence of developing countries as sources of substantial FDI. Both trends mean that globalization in the forestry industry has not only accelerated but also become broader and deeper. The flow of FDI from North to South could receive a strong boost if forestry were to be included in the "clean development mechanism" for carbon dioxide reductions under the Kyoto Protocol.

The forces of change

The industry is moving and changing for a reason. An analysis of the forces driving the process helps to understand the origins and likely future direction of change. The globalization now taking place owes much to the adjustments governments have been making to the regulatory framework, both nationally and internationally. Falling tariffs and regulations facilitating and encouraging FDI have created new opportunities. The World Trade Agreement and the various regional free trade zones have substantially lowered tariffs. For most products, they are now below 5 per cent in the major markets.

All forecasts expect the world market to grow more slowly in the future than in recent decades. Consumption should, however, rise much faster than the average in some regions such as Asia and Eastern Europe, and for some products such as paper and paperboard, as well as furniture. Even though gains in conversion efficiency, recovery and recycling have led to a reduction in the amount of roundwood required per unit wood product, the availability and the price of raw material remain important factors.

Moving towards a new international division of labour and a sustainable industry

The sources of supply have been gradually shifting from public to private and from natural to planted forests. That trend should continue, with plantation-grown timber predicted to account for half of world roundwood consumption by 2040, up from only 35 per cent today. Conditions for plantations are particularly favourable in parts of the southern hemisphere.

The forces driving globalization have also hastened the process of structural adjustment already occurring in the sector. On the whole, the forest and wood industries are still dominated by small and medium-sized enterprises. Even in the pulp and paper segment, concentration levels are lower than in other commodity sectors, but the average size of firms and the market share of the biggest have been going up in all subsectors. Bigger units with more vertical and horizontal integration are better placed to take advantage of international markets and value added chains, thereby accelerating further globalization.

The location of future markets as well as of sources of raw material, coupled with the increased financial clout and reach of bigger firms, has been redirecting the flow of FDI increasingly from North to South and West to East. While investment in traditional producer countries has been oriented more towards upgrading and replacing obsolete facilities, rather than adding new ones, low-cost producers in developing countries and Eastern Europe have emerged for a number of products, in particular furniture. Their capacity has often been financed with FDI and their output has been a growing world market share at the expense of traditional producers.

A different kind of move, but one that has been gaining momentum in recent years, is the widespread adoption of the sustainable development objective by the forest products industry. In keeping with the consensus reached by the United Nations Conference on Environment and Development (UNCED), sustainable

development in forestry and the forest industries has been defined as an equilibrium between economic development, the conservation of the environment and social justice.

The adoption of this goal is recent and implementation still in its early stages, but it has already left clear imprints on the forest policies and practices of countries and individual firms. In today's competitive markets more and more firms have come round to the view that demonstrating environmental and social responsibility can be a decisive advantage to organizations. One outcome of this development has been the spread of certification and labelling as a means of independently verifying claims of sustainability or good stewardship in a credible manner and communicating this to customers and the public.

Implications for decent work

All of these developments are having profound social and labour impacts. They concern all dimensions of decent work: employment and income, job quality and social security, rights at work and social dialogue.

Employment: An estimate based on the best available data puts global forest-based employment at some 47 million work-years (full-time equivalents). This includes both the formal industrial sector, with more than 17 million jobs, and the informal and subsistence sectors, with together around 30 million. The latter figure is very uncertain, but in any case the actual number of persons involved is several times larger than the full-time equivalent, because work is mostly part time or seasonal.

In formal industrial employment, the four subsectors contribute rather evenly: 4.7 million jobs in forestry, 4.6 million in the wood industries, 3.5 million in wooden furniture making, and 4.6 million in pulp and paper.

The trend over the last decade has been one of falling or at best stagnating overall employment in practically all industrialized countries, despite substantial growth in production in most cases. While forestry employment in industrialized countries has fallen across the board, increases have been registered in a few subsectors in some countries. Likewise, countries in transition have been losing forest industry jobs and may face more losses as restructuring continues. The picture has been brighter in those developing countries that are not confronted with forest resource shortages. FDI and access to export markets have contributed significantly to job creation in some countries and industries.

The decline in employment is almost certain to continue in industrialized countries, given the prospects of slower growth in consumption in the future. Productivity has consistently outpaced even the faster increases in output of the past decades. Globalization, with mobile capital, worldwide availability of advanced technology and bigger firms more inclined to substitute capital for labour, will make job creation in the forest industries an uphill struggle even in developing countries, except for those that see spectacular growth in output. Some countries, industrialized as well as developing ones, have experienced disruptive change with sudden drops in employment following restrictions on forest harvesting. In the biggest case, that of restrictions in three major catchment areas in

China, some 1.2 million workers will be affected. More than 900,000 of them will lose their present jobs.

These general trends and mechanisms notwithstanding, some countries and firms have been coping with globalization and other changes much better than others, or even benefited from them. The impact of globalization is to a large extent conditioned by the reaction of firms and governments. Even small firms have been able to use it to their advantage.

Quality of employment: Wages are one of the main ways of sharing the benefits of a sector with a wider part of society. Wages in the forest industries correlate closely with gross domestic product per capita in the respective countries. Within the sector, there is typically a gradient between pulp and paper wages, which are at or above the manufacturing average, and lower wages in forestry, wood and furniture, which are at or close to the minimum wage in some developing countries.

There is no sign that globalization has had a direct effect on wage levels, which continue to be determined by national labour markets. Attempts to cut wages have therefore been unsuccessful. In order to remain competitive vis-à-vis other sectors, the forest industry is more likely to be forced to increase wages in some countries and subsectors. Past wage rises have been more than offset by productivity gains, keeping labour costs per unit output stable and reducing them as a percentage of total costs.

One factor associated with globalization and structural change that has strongly influenced quality of employment, generally for the worse, is outsourcing, in particular in the case of forestry contractors. In forestry, contracting has or is about to become the dominant mode of operation around the world. Contractors and their workers have lower quality jobs by practically all measures: income, job stability, working hours, safety and health, and social security coverage.

Contractors are caught in a number of dilemmas. On the one hand, they are a key link in the production chain. Future reductions in harvesting and transport costs will depend on the gains in productivity they are able to achieve. They will contribute to the environmental impact of forest operations or to avoidance of it. On the other hand, they are not very profitable, have an unpredictable workload and fluctuating revenue. They get little support from others in the supply chain, but are exposed to severe and sometimes unfair competition. Training systems are not geared to their needs. In such a situation, investments in advanced equipment and work organization, as well as in qualified staff, are difficult.

Skill development is a priority area in all countries and all subsectors, not only forestry contractors. Developing countries often lack the physical and institutional infrastructure for training. Even industrialized countries with good facilities, however, are facing difficulties in attracting and retaining qualified personnel.

Rights at work: Friction between a globalizing forestry sector and social and labour rights has been growing with regard to local communities and indigenous peoples. A number of clashes, some of them violent, have erupted in recent years. The potential for such conflicts is rising as plantation forestry and the harvesting of

natural forests advance into new areas. Unacceptable social and environmental cost is believed to be a result of deficits in the design of schemes and investments or of poor management. Giving full consideration to social impact can assist in maximizing benefits for all concerned.

Social dialogue: The institutions of social dialogue and the organizations involved are often weak in countries where the forest industries have been growing strongly. In all countries, contracting out has complicated organization and the establishment of forums for social dialogue. While firms are more and more organized and operate internationally, their counterparts for social dialogue in governments and workers' organizations have mostly remained confined to individual plants or countries. More social dialogue and stronger partners appear to be very desirable, not least in view of the importance of the social dimension of sustainable development.

Decent work and sustainable development

In a natural resource-based sector like the forest industry, the links between sustainable development and decent work come out more clearly than in other sectors. There is a large measure of congruity between the components of decent work as defined by the ILO constituents and the social dimensions of sustainable development in forestry as set out in international agreements. Sustainable development is impossible without decent work. The latter not only addresses the social goals of sustainable development, but can also contribute to the equally important objectives of economic viability and conservation of the environment.

Incorporating the social dimension of sustainable development

In order to make sustainable development a reality, the social dimension will have to be incorporated more fully and in more operational terms into policies related to the forestry sector and into industry practice. The experience of the ILO constituents and the agreements they have reached provide an excellent basis for the formulation of a shared international vision for policies and strategies for sustainable forest management and industry. This has been used in a guide to ILO texts for the development of criteria and indicators for sustainable forest management.

One way in which this is finding a practical application in individual enterprises is through certification. Third party verification of performance to a certain standard resulting in certification and the right to use a label has been gaining ground rapidly in recent years. Having been dominated by environmental concerns and related NGOs in the beginning, certification has been paying growing attention to the social components of sustainable development.

Decent work and a sustainable resource base

Very strong links between forest resources and decent work are apparent in the issue of deforestation. It is now widely accepted that the underlying causes of deforestation are often social and economic in nature. Forestry alone cannot

overcome these problems, including poverty, but it can contribute to alleviating them.

A hands-on way in which ILO constituents in a number of countries have been building on the relationship between decent work and sustainable development is seen in the codes of forest practices incorporating productivity concerns as well as protection of the environment and of the workforce.

Social problems and opportunities become particularly acute where the rapid expansion or contraction of the resource base drastically changes local economies and labour markets. In both cases, the social impacts and the needs and aspirations of local communities must be taken into consideration if a lasting and equitable solution is to be found. Active involvement of those affected is one of the keys to success, for countries, regions or individual firms, as a number of cases have shown. The forest industries have increasingly sought to establish mutually beneficial partnerships with local communities.

Developing forest industries, especially small and medium-sized enterprises

Countries and firms have been looking for ways to increase or at least maintain the benefits from forest industries development in the face of growing international competition and structural adjustment. Smaller firms are highly valued because of their relatively high employment intensity, their ability to add value through further processing and their contribution to local, often rural, economies. They often find themselves at a disadvantage in the current context of globalization and structural adjustment.

One group of mostly small enterprises that have been affected are forestry contractors. In many countries, efforts have been made to overcome the constraints and deficits associated with the use of contractors, including with respect to decent work. As a result of these efforts by ILO constituents, a vision for forestry contractors and best practices for turning that vision into reality are taking shape: contractors should be competent enterprises which owe their competitiveness to specialization in equipment, skill and work organization, rather than to substandard conditions. They should be able to achieve further improvements through productivity increases, to adapt to new requirements and to offer attractive workplaces.

To turn this vision into a reality requires contributions from all the important actors in the sector. The legal framework should provide clarity regarding the status of a contractor, spell out the basic conditions for contractor firms and assist with maintaining fair competition. The contractor firm should be a formally established enterprise with competent management and skilled personnel, adequately equipped and disposing of sufficient working capital. Quality management systems which can also cover safety and health have proved to be valuable and adaptable tools. Employment contracts based on collective agreements and support from contractors' associations have contributed to upgrading the image and performance of contractors. A stable partnership between contractors and principals is often a precondition for progress.

There have also been numerous initiatives to promote small and medium-sized enterprises in downstream processing. Many of these have centred around the concepts of the "industrial district" and "industry cluster". Both try to build on the synergies found in countries and regions where forest industry firms, specialized equipment manufacturers, suppliers and supporting institutions form extensive and closely interwoven networks. In order to foster such links, projects seek to improve information flows and communication, carry out targeted research into products and processes, facilitate access to credit and venture capital and support human resource development. Most of these development efforts are based on partnerships and cost-sharing between governments and the private sector. They often involve tripartite consultation. There have been some encouraging results. However, as many of these programmes are fairly recent, it is too early to say whether the dynamics found in historically grown industrial clusters and districts develop spontaneously or can also be induced.

The component of decent work that will arguably get the biggest boost from the move towards sustainability is social dialogue. Like the decent work framework, sustainable development considers participation and social dialogue as both an end and a means, i.e. as instruments to achieve a particular goal as well as a right. The discussion about sustainable development and measures to put it into practice have created a series of new issues and forums to which the ILO constituents are expected to contribute their experience. These range from national forest programmes and certification to conflict resolution.

The best results have often been obtained where several of the measures described have been applied to complement each other and where government and private sector act in a coordinated fashion. The role of governments as regulators has remained vital, but in addition they are more and more solicited as mediators and partners of the private sector.

Globalization is a powerful trend that is often described in terms of metaphors invoking the forces and laws of nature. That is rather misleading, as it is clearly a phenomenon brought about and conditioned by political decisions by governments, enterprises and society at large. Two conditioning factors resulting from such decisions are the goals of sustainable development and of decent work. Problems and deficits with respect to both still abound, but there is a large and growing body of evidence and examples suggesting that globalization is compatible with both decent work and sustainable development. More and more governments, employers and workers have been taking initiatives to demonstrate this internationally, at national level and within individual enterprises. It is hoped that this Meeting will be an important step in that direction.

7.2. Suggested points for discussion

The discussion is expected to briefly review the first four chapters of the report and consider the implications discussed in Chapter 5, before moving on to Chapter 6 and seeking agreements on steps that governments, employers and workers should take in order to achieve the objective of socially sustainable development. The following main points for discussion are suggested:

1. What are the main developments in the forestry and wood industries and what are the factors driving these changes?

2. What are the implications of these changes for decent work in the sector in terms of quantity and quality of employment, rights at work, social protection and social dialogue?

3. What should governments, employers and workers do in order to contribute to socially sustainable development in the forest and wood industries at international level, nationally and within enterprises?

4. How could the ILO best assist the constituents in their efforts to implement socially sustainable development in the forestry and wood industries?

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